

Warrington Hand-Held Computer User Manual

May 15, 2008

Part No. 8100157.A



*ISO 9001 Certified
Quality Management System*



Preliminary Draft

This user manual supports Model Numbers:

- PX750BT
- PX750BT8
- FCC ID: GM3PX750BT and GM3PX750BT8

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Return-To-Factory Warranty

Psion Teklogix Inc. provides a return to factory warranty on this product for a period of twelve (12) months in accordance with the Statement of Limited Warranty and Limitation of Liability provided at www.pSIONteklogix.com/warranty. (If you are not already a member of Teknet and you attempt to view this warranty, you will be asked to register. As a member of Teknet, you will have access to helpful information about your Psion Teklogix products at no charge to you.) In some regions, this warranty may exceed this period. Please contact your local Psion Teklogix office for details. The warranty on Psion Teklogix manufactured equipment does not extend to any product that has been tampered with, altered, or repaired by any person other than an employee of an authorized Psion Teklogix service organization. See Psion Teklogix terms and conditions of sale for full details.



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Restriction On Hazardous Substances (RoHS) Directive 2002/95/EC

What is RoHS?

The European Union has mandated that high environmental standards be met in the design and manufacture of electronic and electrical products sold in Europe, to reduce hazardous substances from entering the environment. The “Restriction on Hazardous Substances Directive (RoHS)” prescribes the maximum trace levels of lead, cadmium, mercury, hexavalent chromium, and flame retardants PBB and PBDE that may be contained in a product. Only products meeting these high environmental standards may be “placed on the market” in EU member states after July 1, 2006.



RoHS Logo

Although there is no legal requirement to mark RoHS-compliant products, Psion Teklogix Inc. indicates its compliance with the directive as follows:

The RoHS logo located either on the back of the product or underneath the battery in the battery compartment (or on a related accessory such as the charger or docking station) signifies that the product is RoHS-compliant as per the EU directive. Other than as noted below, a Psion Teklogix product that does not have an accompanying RoHS logo signifies that it was placed on the EU market prior to July 1, 2006, and is thereby exempt from the directive.



Note: Not all accessories or peripherals will have a RoHS logo due to physical space limitations or as a result of their exempt status.

Disclaimer

Every effort has been made to make this material complete, accurate, and up-to-date. In addition, changes are periodically added to the information herein; these changes will be incorporated into new editions of the publication.

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APPROVALS & SAFETY SUMMARY

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1.1 Declaration Of Conformity

Declaration of Conformity documents are provided at:

www.pSIONTEKLOGIX.com/DoC

1.2 Safety Summary



When used in a residential, commercial or light industrial environment, the product and its approved UK and European peripherals fulfil all requirements for CE marking.

R&TTE Directive 1999/5/EC

This equipment complies with the essential requirements of EU Directive 1999/5/EC (Declaration available: www.pSIONTEKLOGIX.com/DoC).

Cet équipement est conforme aux principales caractéristiques définies dans la Directive européenne RTTE 1999/5/CE. (Déclaration disponible sur le site: www.pSIONTEKLOGIX.com/DoC).

Die Geräte erfüllen die grundlegenden Anforderungen der RTTE-Richtlinie (1999/5/EG). (Den Wortlaut der Richtlinie finden Sie unter: www.pSIONTEKLOGIX.com/DoC).

Questa apparecchiatura è conforme ai requisiti essenziali della Direttiva Europea R&TTE 1999/5/CE. (Dichiarazione disponibile sul sito: www.pSIONTEKLOGIX.com/DoC).

Este equipo cumple los requisitos principales de la Directiva 1995/5/CE de la UE, “Equipos de Terminales de Radio y Telecomunicaciones”. (Declaración disponible en: www.pSIONTEKLOGIX.com/DoC)

Este equipamento cumpre os requisitos essenciais da Directiva 1999/5/CE do Parlamento Europeu e do Conselho (Directiva RTT). (Declaração disponível no endereço: www.pSIONTEKLOGIX.com/DoC).

Ο εξοπλισμός αυτός πληροί τις βασικές απαιτήσεις της κοινοτικής οδηγίας EU R&TTE 1999/5/EK. (Η δήλωση συμμόρφωσης διατίθεται στη διεύθυνση: www.pSIONTEKLOGIX.com)

Deze apparatuur voldoet aan de noodzakelijke vereisten van EU-richtlijn betreffende radio-apparatuur en telecommunicatie-eindapparatuur 199/5/EG. (verklaring beschikbaar: www.pSIONTEKLOGIX.com/DoC).

Dette udstyr opfylder de Væsentlige krav i EU's direktiv 1999/5/EC om Radio- og teleterminaludstyr. (Erklæring findes på: www.pSIONTEKLOGIX.com/DoC).

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Dette utstyret er i overensstemmelse med hovedkravene i R&TTE-direktivet (1999/5/EC) fra EU. (Erklæring finnes på: www.pSIONteklogix.com/DoC).

Utrustningen uppfyller kraven för EU-direktivet 1999/5/EC om ansluten teleutrustning och ömsesidigt erkännande av utrustningens överensstämmelse (R&TTE). (Förklaringen finns att läsa på: www.pSIONteklogix.com/DoC).

Tämä laite vastaa EU:n radio- ja telepäätelaitedirektiivin (EU R&TTE Directive 1999/5/EC) vaatimuksia. (Julkilausuma nähtävillä osoitteessa: www.pSIONteklogix.com/DoC).

PSION TEKLOGIX tímto prohlašuje, že tohle mobilní zařízení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1995/5/ES (NV č. 426/2000 Sb.) a Prohlášení o shodě je k dispozici na www.pSIONteklogix.com/DoC.

Toto zařízení lze provozovat v České republice na základě generální licence č. GL - 12/R/2000.

PSION TEKLOGIX týmto vyhlasuje, že toto mobilné zariadenie spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1995/5/ES (NV č. 443/2001 Z.z.) a Vyhlásenie o zhode je k dispozícii na www.pSIONteklogix.com/DoC.

Toto zariadenie je možné prevádzkovať v Slovenskej republike na základe Všeobecného povolenia č. VPR-01/2001

Настоящото устройство е в съответствие с основните изисквания на европейската Директива 1999/5/EC (Декларацията за съответствие може да бъде намерена на адрес: www.pSIONteklogix.com/DoC)

Acest echipament satisface cerințele esențiale ale Directivei UE 1999/5/EC (Declarația poate fi găsită pe site-ul: www.pSIONteklogix.com/DoC)

Oprema je skladna z bistvenimi zahtevami EU direktive 1999/5/EC (Deklaracija je na voljo: www.pSIONteklogix.com/DoC)

Käesolev seade vastab EU Direktiivile 1999/5/EC (selgitus saadaval: www.pSIONteklogix.com/DoC)


Az eszköz megfelel az EU 1999/5/EC fő direktíváinak (a nyilatkozat megtalálható: www.pSIONTEKLOGIX.com/DoC)

Štī aparatūra nodrošina nepieciešamas ES Direktīvas prasības
(Deklarācija ir pieejama: www.pSIONTEKLOGIX.com/DoC)

Įranga atitinka pagrindinius EU direktyvos 1999/5/EC reikalavimus
(Deklaraciją galima rasti www.pSIONTEKLOGIX.com/DoC)

Dan I-apparat huwa konformi mal-kriterji tad-direttiva ta' I- EU 1999/5/EC.
(Din id-dikjarazzjoni tista ssiba fuq is sit www.pSIONTEKLOGIX.com/DoC)

To urządzenie spełnia wymagania zasadnicze dyrektywy Unii Europejskiej 1999/5/EC
(Deklarację zgodności można znaleźć pod adresem internetowym
www.pSIONTEKLOGIX.com/DoC)

 Use of the 802.11 device in France: Owing to French Government restrictions, the 802.11 device is limited to indoor use. It may be used outdoors, on private property, only with prior authorization from the French Ministry of Defense.

FCC Information To Users

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

Reorient or relocate the receiving antenna.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

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Chapter 1: Approvals & Safety Summary Safety Summary

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by Psion Teklogix Inc. may void the FCC authorization to operate this equipment.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment under 47 CFR 2.1093 paragraph (d)(2).

End users must follow the specific operating instructions for satisfying RF exposure compliance.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Some equipment in hospitals and aircraft are not shielded from radio frequency energy. Do not use the hand-held onboard aircraft, or in hospitals, without first obtaining permission.

Do not use near pacemakers. The Warrington may affect the operation of some medically implanted devices such as pacemakers, causing them to malfunction. Avoid placing your Warrington next to such devices. Keep a minimum distance of 20 cm between the medical device and the Warrington to reduce the risk of interference. If you have any reason to

suspect that interference is taking place, turn off the Warrington and contact your medical

§  for assistance.

Note: To maintain compliance with the FCC RF exposure guidelines, if you wear the device on your body, use the Psion Teklogix approved carrying case.

Use of non-approved accessories may violate FCC RF exposure guidelines.

Emissions Information For Canada

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations (ICES-003). When using the 802.11 radio option, to prevent radio interference, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Preliminary Draft

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada (ICES-003). En cas d'utilisation du module radio 802.11, afin d'éviter interférence radio avec le service autorisé, l'appareil doit être utilisé à l'intérieur, tout en tant éloigné de toute fenêtre afin de garantir le maximum de protection. Si cet équipement (ou son antenne émettrice) est installé à l'extérieur, il est alors soumis à licence.

Preliminary Draft

INTRODUCTION

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Preliminary Draft

2.1 About This Manual

This manual describes how to configure, operate and maintain the Warrington hand-held computer.

Chapter 1: Approvals & Safety Summary

provides approval and safety information such as FCC radiation and Canadian emission details, CE warnings, R&TTE directives, and so one.

Chapter 2: Introduction

provides a basic overview of the Warrington.

Chapter 3: Basic Checkout

describes the steps required to get the Warrington ready for operation, including setting up the 802.11b/g radio.

Chapter 5: Getting To Know The Warrington

describes Warrington features and outlines how to charge and maintain the battery. This chapter also provides a description of the keyboards, how to navigate in Microsoft Windows CE 5.0, and so on.

Chapter 4: Working With Windows CE 5.0

describes the Microsoft Windows CE 5.0 desktop and how to use it. This chapter also outlines the basics of moving around a Windows CE 5.0 window, selecting and opening icons, files, folders and working with a Windows dialog box.

Chapter 6: Configuration

describes the Windows CE 5.0 Control Panel and how to use it to configure the Warrington, along with the scanners attached to the hand-held, and so on.

Chapter 7: Peripheral Devices & Accessories

describes the peripherals and accessories available for your Warrington.

Chapter 8: Specifications

lists hand-held, radio, scanner, and battery specifications.

Appendix A: Port Pinouts

describes Warrington pinouts.

2.2 Text Conventions



Note: Notes highlight additional helpful information.



Important: *These statements provide particularly important instructions or additional information that is critical to the operation of the equipment.*



Warning: *These statements provide critical information that may prevent physical injury, equipment damage or data loss.*

2.3 Warrington Hand-Held Computer Features



Important: *For all safety, regulatory and warranty information, refer Chapter 1: “Approvals & Safety Summary”.*

The Warrington is a compact, ruggedized hand-held running the Microsoft Windows CE 5.0 operating system. It is intended for use in commercial and light industrial applications. The Warrington can be ordered with or without a radio. Without a radio, it operates as a batch or *unconnected* computer. With a radio installed, the Warrington operates as a *connected* computer, delivering real time wireless data transactions. All possible bar code input methodologies are supported by the scanner and imager available with this hand-held. Optimization for specific operational environments is supported with a wide range of peripheral options and carrying accessories.

The unique tilted screen design on this hand-held makes the display content readily visible. It means that the operator can scan a bar code and view the results on the display in one movement – no need to manually tilt the unit to view the results after each scan. In addition, the tilted screen in conjunction with the protective rib at the base of the keyboard allows the unit to be placed facedown safely with no danger of an accidental key press.



Note: *For complete Warrington hand-held computer specifications, refer to “Specifications” on page 203.*

Figure 2.1 Warrington Hand-Held Computer - Numeric & Alpha-Numeric



Model Variants

Connected Warrington Standard Features:

- 2.7 inch colour touchscreen
- CE .Net Pro
- 64/128 MB Memory
- Micro SD slot
- 3000 mAh Battery
- VoIP (Push-To-Talk)
- WiFi/Bluetooth Radio

Additional Options:

- 1D Imager
- 1D Laser Scanner
- Keyboard Variants: 48-Key Alpha-Numeric or 26-Key Numeric

Batch Warrington Standard Features:

- 2.7 inch Colour Touchscreen
- Numeric Keypad
- CE .Net Core
- 64/128 MB Memory
- Micro SD Slot
- 3000 mAh Battery

Additional Options:

- Bluetooth Radio
- Bluetooth Radio and 1D Imager
- Bluetooth Radio and 1D Laser Scanner

Platform

- **Processor:** PXA270 Processor @ 312 Mhz
- **Memory:**
 - On-board RAM: 128 MB SDRAM
 - On-board ROM: 64 MB Flash

Operating System

- Microsoft[®] Windows[®] CE 5.0

Programming Environment

- HTML, XML
- Mobile Devices SDK
 - CE.NET SDK:
 - Java Visual C++
 - Standard protocol APIs – Windows[®] sockets (WinCE)

Wireless Communications

- On-board IEEE 802.11b/g (CCX Certified)

- On-board *Bluetooth* radio (10 meter range)

Application Software

- Internet Explorer® 6 for CE
- Wordpad
- ActiveSync
- Open TekTerm
- ANSI
- TESS terminal emulations
- IBM 3270, IBM 5250, HP 2392
- Wavelink®
- MCL
- MCC
- PCX Connect (Push-To-Talk)

Bar Code Applications

- 1D Standard Laser Scanner Option – SE955
- 1D Standard Imager Option – EV15

User Interface

- Display:
 - 1/4 VGA portrait mode
 - Tilted screen for clear view of display content, even while scanning a bar code
 - Sunlight readable with transmissive touchscreen
 - Colour 240 x 320 graphic TFT
 - Passive stylus or finger operation
 - Multicolour LED for scanning
- Keypad:
 - 48-key alpha-numeric (Not available for Unconnected batch model variants.)
 - 26-key numeric
 - LED backlit keypad
 - Ergonomically enhanced for ambidextrous one-hand operation
- Audio

- Built-in microphone and receiver on all 'Connected' variants
- 85 dB internal beeper

Bluetooth® Class II, Ver 2



*Note: Bluetooth radios are a standard in all units equipped with 802.11b/g radios. For those units operating in batch mode (off-line data collection) **Bluetooth** installation is optional.*

- Working Range: 5 m to 10 m (16.4 ft. to 32.81 ft.)
- Supports Enhanced Data Rate (EDR) for up to 3 Mbps data rate
- Supports Advanced Frequency Hopping (AFH) for reduced interference with 802.11b/g radio



*Note: 802.11b/g and **Bluetooth** are available simultaneously.*

Expansion Ports

- RS232 Serial
- USB host

Power Management

- 3.7 V @ 3000 mAh Lithium-Ion rechargeable battery
- 8 hour battery operation
- Smart battery system level 3 compliant
- Built-in gas gauge and performance monitor
- System backup (u to 10 minutes) during battery swap
- 3 Day real time clock backup
- Adjustable battery allocation between system backup and runtime

User Environment

- Operating Temperature: -10 °C to 50 °C (14 °F to 122 °F)
- Storage Temperature: -20 °C to 60 °C (13 °F to 140 °F)
- Relative Humidity: 5% to 95% RH non-condensing
- Rain and Dust Protection: IP54, IEC 529
- Drop: 1.2 meters (4 feet) – 26 drops to polished concrete
- Shock and Vibe: 5-400 Hz PSD (random) and 30 g (3 axis)

- ESD: ± 15 k Vdc air discharge, ± 8 k Vdc contacts

Physical Dimensions And Weight

- 168 mm x 64 mm x 34 mm
- Weight with battery: 270 g

Accessories

- Desktop charger
- Quad charger
- Additional miscellaneous adaptors and cables (a complete list of accessories is available at www.pSIONteklogix.com)

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BASIC CHECKOUT

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3.1 Preparing The Warrington Hand-Held For Operation

3.1.1 The Battery

The Warrington is powered with a 3000 mAh Lithium Ion battery pack – Model No. WA3006.



Warning: *Before charging the battery, it is critical that you review the battery safety guidelines in Chapter 1: “Approvals & Safety Summary”.*

3.1.1.1 Charging The Main Battery



Important: *Before opening the battery cover on your Warrington, press [FN/BLUE] [ENTER] to turn off the hand-held. Removing the battery while the unit is running may cause the hand-held to reboot.*

Battery packs shipped from the factory are charged to approximately 40% and must be fully charged prior to use. Batteries can be charged using a variety of chargers and docking stations along with a Warrington internal charger. When using the internal charger, a suitable power source is required. All chargers and docking stations are described in Chapter 7: “Peripheral Devices & Accessories” beginning on page 184.



Note: *If you are powering up a new unit, a warning message may appear on the screen indicating that the backup battery capacity is low. To recharge the internal battery, you must fully charge the Warrington with the main battery installed in the unit.*

3.1.2 The Super Capacitor

An onboard super capacitor provides up to 10 minutes of *suspend mode* backup power to the Warrington to give you time to swap in a new battery; all unnecessary draws on power such as the display and CPU are shut down to preserve power.



Important: *When you initially power up the hand-held, leave the battery in the unit for a minimum of 2 minutes to allow the super capacitor to reach full capacity.*

If the battery pack reaches its *Suspend Threshold* (refer to “Suspend Threshold” on page 102) and the hand-held shuts down, the super capacitor will protect the data stored in the unit until a charged battery pack is installed.

3.2 Switching The Warrington On And Off

3.2.1 Installing The Battery And Switching The Unit On



Important: Press [FN/BLUE] [ENTER] to turn off the hand-held before removing battery on your Warrington. If the battery is removed while the unit is still powered on, the unit may reboot.

- Push the release button at the base of the battery cover to unlatch it. Remove the battery cover.
- Insert a *charged* battery into the unit, making certain that the connectors on the battery are aligned with those in the Warrington battery well.
- Replace the battery cover.



Note: If you are using a docking station or an external power supply, you can insert an uncharged battery and switch it on.

To switch the Warrington on:

- Press and hold down the [ENTER] key for at least one second.
- When the LED flashes green, release the [ENTER] button.

The desktop screen is displayed.



Note: If the unit was already in use—the unit may be off (suspend state) – pressing [ENTER] ‘wakes’ the unit from this state. The screen in which you were working prior to the suspend state is displayed.

3.2.2 Switching The Unit Off (Suspend)

- Press the [FN/BLUE] key, and then press [ENTER].

3.3 Calibrating The Touchscreen



Note: Keep in mind that the touchscreen function can be turned off (see “Touch” on page 105).

The Warrington touchscreen is factory-calibrated and ready-to-go; however, over time the touchscreen operating parameters may change, and may need to be recalibrated for correct operation. Refer to “Calibrating The Touchscreen” on page 65 for details.

3.4 Configuring The Murata 802.11b/g Radio

The Warrington supports a Murata Direct Sequence Spread Spectrum 802.11b/g radio module. The radio is mounted on the hand-held logic board.

The most common 802.11 settings are configured as defaults. However, there are some fields that must be completed, including the SSID of your access point and the security methods implemented in the network (including access keys).



Note: In most situations, the configuration of your 802.11 radio will require parameter setting and access keys from a network administrator.

Network administrators should review the detailed security information in this section in order to effectively configure the 802.11 wireless network.

To configure the 802.11 radio:

1. Tap on **Start>Settings>Network and Dial-up Connections**.

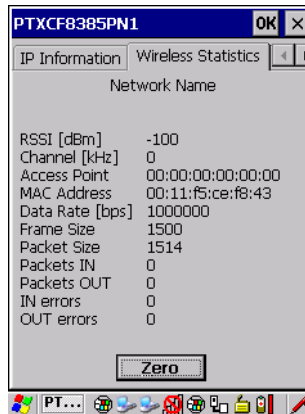


2. Choose the radio icon to open the **802.11 Wireless LAN Settings** window.

Figure 3.1 802.11 Wireless LAN Settings Window

3. **Wireless Statistics Tab:** When you choose the **Wireless LAN** icon, an **802.11 Wireless LAN Settings** window is displayed. This tab lists your radio statistics. Choosing the *Zero* button resets the statistics of the last four items – Packets IN, Packets OUT, IN errors and OUT errors.

Figure 3.2 Wireless Statistics



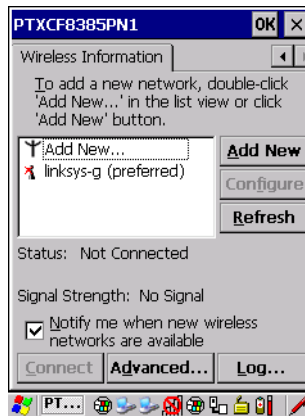
- Tap on the arrow in the upper-right corner of the dialog box to display the next tab – **Wireless Information**.
4. **Wireless Information Tab:** This tab displays existing networks to which you can connect, and it allows you to add a new network or modify the settings for an existing network.



Note: **Configure** button – To change the settings in an existing network, highlight the network you want to modify, and tap on the **Configure** button to display the *Wireless Properties* dialog box.

Connect button – To force connection to a specific, existing network, highlight the network to which you want your Warrington to connect, and tap on the **Connect** button

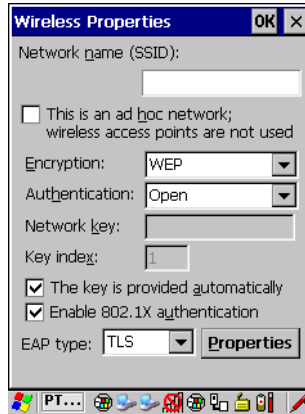
Figure 3.3 Wireless Information Tab



This tab lists available networks – any access points that are broadcasting an SSID, and it lists preferred networks – networks that you have configured. Since access points are generally secure, they will most likely not be listed here. By default, Warrington attempts to connect to preferred networks. This behaviour can be changed by enabling Automatically connect to non-preferred networks in the Advanced dialog box (see Figure 3.8 on page 31).

- To add a new configuration, tap on the **Add New** button. A blank *Wireless Properties* dialog box is displayed.
5. **Wireless Properties:**

Figure 3.4 Wireless Properties Dialog Box



- **Network name (SSID):** Type the appropriate SSID (Service Set Identifier) in the *Network name (SSID)* text box at the top of this dialog box. The *Network name* field can contain a maximum of 32 characters. The name assigned here is listed as a preferred network.



Important: *Keep in mind that the Warrington will only communicate with access points that are configured with the same SSID.*

- **Ad Hoc And Infrastructure:** If you are using an *Infrastructure* network – one in which Warringtons must pass data through an access point – leave the checkbox next to *This is an ad hoc network* blank.

If you are using an *Ad Hoc* network – a network in which Warringtons pass data directly to other Warringtons without an access point – add a checkmark in the checkbox next to *This is an ad hoc network to enable Ad Hoc*.

Encryption:

WEP (Wired-Equivalent Privacy) encryption prevents others from accidentally accessing your network. If you are not using encryption, you can choose Disabled from the dropdown encryption menu. Otherwise, leave this field as is.



Note: *WEP cannot be disabled if you are using WPA or WPA-PSK authentication.*

TKIP (Temporal Key Integrity Protocol) is an encryption protocol included as part of the IEEE 802.11 standard for wireless LANs. Designed to enhance WEP, TKIP uses

the original WEP encryption but ‘wraps’ additional code at the beginning and end to encapsulate and modify it, encrypting each data packet with a unique encryption key.

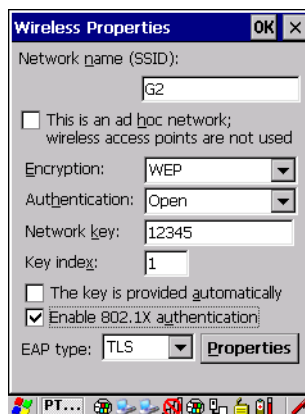
- **Authentication:** 802.11 supports four subtypes of network authentication services: *Open*, *Shared*, *WPA*, and *WPA-PSK*. Under *Open* authentication, any wireless station can request authentication. The station that needs to authenticate with another wireless station sends an authentication management frame that contains the identity of the sending station. The receiving station then sends back a frame that indicates whether it recognizes the identity of the sending station.

Under *Shared* authentication, each wireless station is assumed to have received a secret shared key over a secure channel that is independent from the 802.11 wireless network communications channel.

Under *WPA* and *WPA-PSK* authentication, the use of 802.1x authentication is required. For wireless networks *without* a Remote Authentication Dial-In User Service (RADIUS) infrastructure, WPA supports the use of a preshared key. For wireless networks *with* a RADIUS infrastructure, Extensible Authentication Protocol (EAP) and RADIUS is supported.

- **Network Key:** This text box is used to specify a 5 or 13 ASCII character sequence or an equivalent 10 or 26 Hexadecimal digit sequence that matches the active WEP key on the access point.
- To assign a Network key, highlight **The key is provided automatically**, and *uncheck* the checkbox to disable this option

Figure 3.5 Accessing Network Key and Key Index



- **Key Index:** This field is used to identify the WEP key. Enter a value from **1** to **4**.

- **Enable 802.1x authentication:** 802.1X is the IEEE standard that offers additional security for local area networks. It provides authentication for user devices attached to an Ethernet network, whether wired or wireless. A security protocol packet such as TLS or MD5 encapsulated in an *EAP* is used in conjunction with the 802.1X standard to authenticate users at the MAC layer. Available EAPs are listed in the dropdown menu next to the *EAP* option.

To activate 802.1X, highlight **802.1x authentication**, and check the checkbox.

- **EAP Type (Extensible Authentication Protocol):** This dropdown menu lists the EAP types available on your system. The items in this dropdown menu will vary depending on your network setup. Keep in mind also that some authentication protocols require that you select a Certificate. By selecting the Properties button, you will be able to select a Certificate. “Certificate Assignment” on page 109 provides a website that outlines how to create certificates for your network.

6. Saving and exiting the radio setup.

Once you’ve completed the configuration, press [ENTER], or tap on OK.

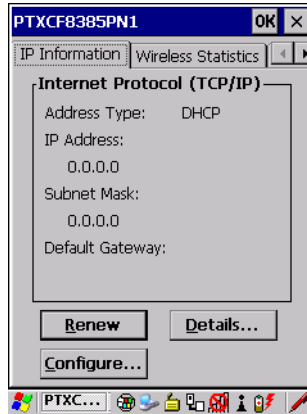
The connection you created will be listed in the *Wireless Information* tab as a preferred network. The radio will search for the SSID and will compare the WEP and authentication information you specified. If there is a match between your hand-held settings and the access point settings, the hand-held will communicate on the network through the access point.

3.4.1 Assigning An IP Address

If your network is not using a DHCP server, you will need to assign an IP address.

- Tap on the **IP Information** tab.

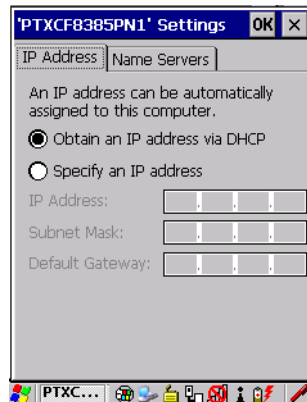
Figure 3.6 IP Information



Note: Tapping the Renew button forces the Warrington to renew or find a new IP address. This is useful if, for example, you are out of communication range for a longer period of time and your hand-held is dropped from the network.

To define a static IP address:

- Tap on the **Configure** button.



- Tap the stylus on the *radio* button next to **Specify an IP address** to select it.
- Type an **IP**, **Subnet Mask** and **Default Gateway** address in the appropriate fields. Press **[ENTER]** to save your information.

3.4.2 Name Servers Tab

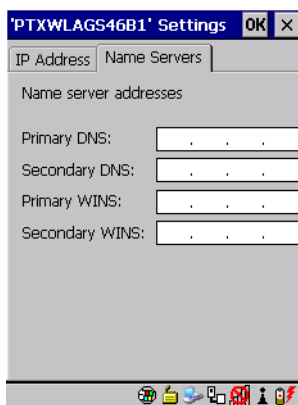


Note: If DHCP is enabled, name server addresses are assigned automatically.

- In the *PTXCF8385P N1 Settings* window, tap on the **IP Information** tab.
- Tap on the **Configure** button.
- Display the **Name Servers** tab

Figure 3.7 Name Servers Tab

- .



The DNS and WINS fields in the *Name Servers* tab allow you to specify additional WINS and DNS resolvers. The format for these fields is ###.###.###.###.

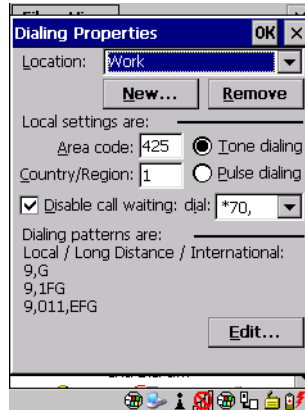
3.4.3 Advanced Features

To display the Advanced Wireless Settings dialog box:

- Tap on the **Advanced** button in the *Wireless Information* tab. (Refer to Figure 3.3 on page 25.)

This window lists the available preferred networks.

Figure 3.8 Advanced Settings



3.4.3.1 Rearranging Preferred Networks

The Warrington attempts to connect with the networks listed in this dialog box in sequence, beginning at the top of the list. If you need to rearrange this list of networks – move networks up and down in the list:

- Tap in the *Networks List*, and highlight the **network** that you want to move up or down in the list.
- To move the highlighted item in the list upward or downward, tap on the **Up** or **Down** button.

3.4.3.2 Deleting A Preferred Network

To delete a network from this list:

- In the *networks* list, highlight the **network** that you want to remove.
- Tap on the **Delete** button.

3.4.3.3 Changing Network Properties

To change the properties of an existing preferred network:

- Highlight the **network** that you want to modify.
- Tap on the **Properties** button.
- Make any necessary changes in the *Wireless Properties* dialog box, and press **[ENTER]** to save the changes.

3.5 Checking The Scanner

If your Warrington is equipped with an internal scanner, you can test it to ensure that it is operating properly. Point the scanner window at a bar code that your scanner was designed to decode—for example, a 1D UPC bar code. Press the SCAN key or pistol trigger, and check for a valid decode on the hand-held screen.

Performance is improved if you disable all unneeded bar codes in the *Bar Codes* screen. Review “Scanner Settings” on page 134 or details about bar codes.

3.6 Data Transfer Between The PC And The Hand-Held

Data transfer options vary slightly depending on the type of operating system installed in your PC. Microsoft® ActiveSync® is PC connectivity software that can be used to connect your hand-held to PCs running this software. ActiveSync works only with the Windows XP SP2 operating system or earlier.

If the Microsoft® Vista® operating system is installed in your PC, ActiveSync is not required to transfer data between your Warrington and your PC.

By connecting the Warrington to a PC with a cable, you can:

- View Warrington files from Windows Explorer.
- Drag and drop files between the Warrington and the PC in the same way that you would between PC drives.
- Back up Warrington files to the PC, then restore them from the PC to the hand-held again, if needed, and so on.

3.6.1 Using Microsoft ActiveSync

To install ActiveSync, follow the step-by-step instructions provided with the program’s setup wizard. Refer to the following website for details:

<http://www.microsoft.com/windowsmobile/activesync/activesync45.mspx>

3.6.2 Using Microsoft Vista

If you have Windows Vista, your Warrington data transfers do not require ActiveSync. To transfer data between your PC and your hand-held:

- Tap on **Start>Computer** to display the drives. Your Warrington will be visible here.
- Open drives, files and folders as you would on your PC.

3.7 VoIP - Using Push-To-Talk

-
-
-

3.8 Resetting The Warrington

3.8.1 Performing A Warm Reset

To execute a warm reset:

- Press and hold down the **[FN/BLUE]** key and the **[ENTER]** key simultaneously for a minimum of six seconds.

A warm reset closes open applications; any unsaved data are lost. Installed programs and saved data are preserved.



Note: You do not need to reset your Warrington after configuring the radio.

3.8.2 Performing A Cold Reset

To perform a cold reset and launch the Windows 5.0 operating system (bypassing the BooSt menu):

- Press and hold down the **[FN/BLUE]** **[FN/ORANGE]** and **[ENTER]** keys simultaneously for a minimum of six seconds.

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WORKING WITH WINDOWS CE 5.0

4

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4.1 Navigating In Windows CE 5.0



Note: In order to access many of the menus discussed in this chapter, the security level must be set to ‘Supervisor’ (see “Security Settings” on page 45).

Graphic user interfaces like Windows CE 5.0 for portable devices and desktop Windows (2000, XP, etc.) utilize ‘point and click’ navigation. An equivalent keyboard shortcut is also available for every ‘point and click’ action.

Windows CE 5.0 supports the same ‘point and click’ user interface and keyboard shortcuts as desktop Windows with one difference—the ‘point and click’ action is accomplished using a touchscreen rather than a mouse. Actions can be performed using any combination of keyboard shortcuts or touchscreen tapping.

4.1.1 Navigating Using A Touchscreen And Stylus



Note: If the touchscreen is not registering your screen taps accurately, the touchscreen may need recalibration. Refer to “Calibrating The Touchscreen” on page 65.

Each Warrington is equipped with a stylus—a pointing tool that looks like a pen—stored in a slot at the top of the unit. The stylus is used to select objects on the touchscreen.



Note: To prevent damage to the touchscreen, use only the stylus (pen) supplied with your Warrington.

To choose an icon, open a file, launch an applet, or open a folder:

- Double-tap the stylus on the appropriate icon.

4.1.2 Navigating Using The Keyboard

If your Warrington touchscreen has been disabled, you can use the keyboard to choose icons, navigate dialog boxes, display the desktop, and so on. If your unit has already been fully configured and your application is launched at startup, you’ll have little need for keyboard navigation, but you can refer to Table 4.1 for a description of the navigation keys.

Table 4.1 Keyboard Navigation

Operation	Key or Key Combination
Switch between active applications	[ALT] [TAB]
Open task manager	[ALT] [ESC]

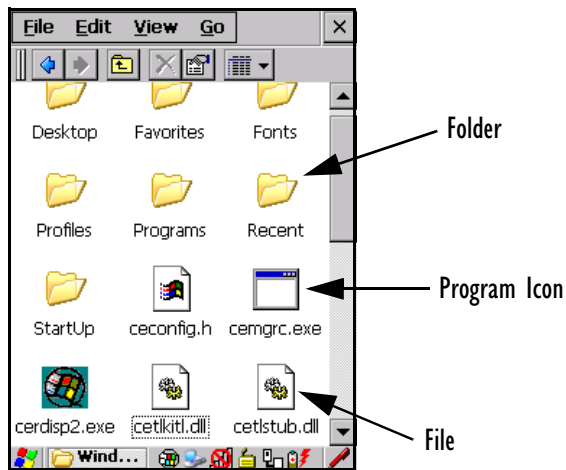
Table 4.1 Keyboard Navigation

Operation	Key or Key Combination
Move the cursor	Arrow keys
Open file, folder or icon	[ENTER]
Exit & Save	[ENTER]
Close/Exit & Do Not Save	[ESC]
Navigate Dialog Boxes	[TAB] To move cursor up: [SHIFT] [TAB] To display the contents of the next 'tab' in a dialog box: [CTRL] [TAB]
Select Radio Button/Press Button	[SPACE]
Go to Start Menu	[FN/BLUE][0]

Keep in mind that unlike a desktop computer, the Warrington does not support key chording (pressing two keys at the same time). You must press one key followed by the next in sequence. Refer to Section 4.2: “Working With Files, Folders And Programs” for additional details about keyboard navigation.

4.2 Working With Files, Folders And Programs

Figure 4.1 Working With Windows Icons



- Double-tap on the appropriate icon—either a folder icon, a program icon or a file icon—to open or launch your selection.

If you're using the keyboard:

- Use the arrow keys to highlight the icon you want to open or launch.
- Press [ENTER].

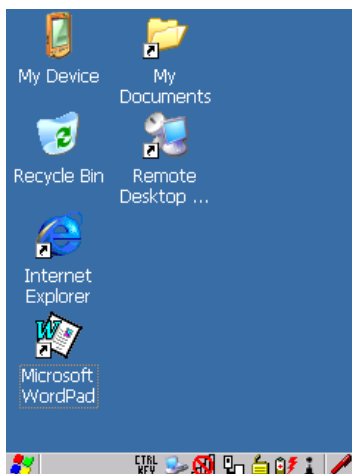
4.3 The Startup Desktop

When the Warrington boots up, the startup desktop (shell) is displayed. Any applications stored in the Startup folder start up immediately.



Note: The startup folder is located in \Windows\StartUp and \Flash Disk\StartUp.

Figure 4.2 The Warrington Startup Desktop



To access desktop icons:

- Double-tap on the icon to open a window or, in the case of an application icon, launch an application.

On the keyboard:

- Use the arrow keys to highlight the icon, and press [ENTER] to launch the highlighted icon.



Note: If the arrow keys do not highlight the desktop icons, the desktop may not be selected. Press [FN/BLUE] [.] (period) to display the Start Menu, and select Desktop. Now the desktop will be “in focus” and the arrow keys will highlight the icons.

4.3.1 The Desktop Icons

The icons displayed in the startup desktop operate in much the same way as those displayed on any standard PC desktop that is running Windows.

My Device

Choosing this icon displays the contents of your Warrington computer. If you're not sure how to access the files, folders and programs displayed, refer to “Working With Files, Folders And Programs” on page 38.

Recycle Bin

This option temporarily stores items that were deleted, allowing you to either permanently delete or restore these items.

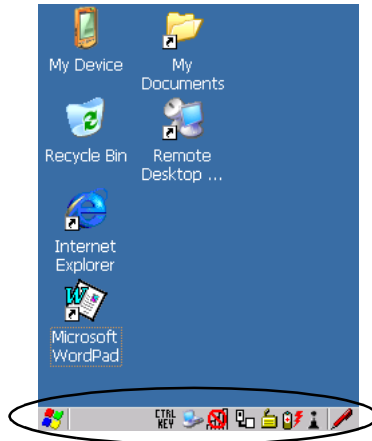
Internet Explorer

Choosing this icon launches Internet Explorer—a standard Windows CE 5.0 version. Keep in mind that your supervisor will need to set up access using the *Internet Options* and the *Network and Dial-up Connections* icons in the *Control Panel*.

Remote Desktop Connection

This option allows your Warrington to communicate with a remote desktop PC. “Remote Connect” on page 79 provides a website with step-by-step instructions.

4.3.2 The Taskbar



The Warrington is equipped with a taskbar at the bottom of the screen. It displays icons through which you can view the battery capacity and radio signal quality of your unit. If the hand-held is attached to a charger, cradle, docking station or PDM, an associated icon is displayed. In addition, the taskbar displays the application(s) currently running on your unit and the security level assigned to your Warrington.

The taskbar also displays active modifier keys: [SHIFT], [ALT], [CTRL], [FN/BLUE] and [FN/ORANGE]. Keys that have been locked “on” are displayed in uppercase letters. For example, if you have set the [CTRL] key Lock to “on” in the Keyboard menu and you press the key, it is displayed as CTRL KEY in the taskbar. (For detailed information on modifier keys and keyboard options, see “The Keyboard” on page 60).

4.3.2.1 Using The Taskbar

A tooltip is displayed as each taskbar icon is highlighted. The tooltip provides the status of each icon.

If you’re using the touchscreen:

- Tap and hold the stylus on an icon to display the icon's tooltip. Double-tap the icon to open the *Control Panel* dialog box associated with the icon. For example, double-tap the battery icon to display a dialog box listing the current battery capacity information.

On the keyboard:

- Press [FN/BLUE] [.] (period) to display the *Start Menu*.
- Choose **Shortcuts** from the *Start Menu*, and then press the [RIGHT] arrow key to display the sub-menu.

- Choose **System Tray** in the sub-menu.
- Use the arrow keys to highlight the icon in the taskbar about which you'd like more information.
- Press [ENTER] to display the appropriate dialog box.

4.3.2.2 Customizing The Taskbar

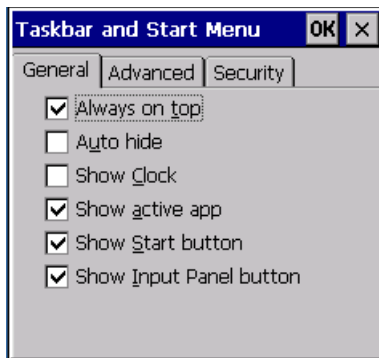
To customize the taskbar so that it displays only those icons you require:

- In the *Start Menu*, choose **Settings>Taskbar**.

If you're using the keyboard:

- Press [FN/BLUE] [.] to display the *Start Menu*.
- Highlight the **Settings** option, highlight **Taskbar** in the sub-menu, and press [ENTER].

The *Taskbar and Start Menu* dialog box is displayed.



Taskbar General Tab

- Tap the stylus on the items you want to activate or deactivate. The check mark indicates active items.

If you're using the keyboard:

- Highlight the options you want to activate, and press the [SPACE] key to select them. The check mark indicates active items.

Taskbar Advanced Tab



- Tap on the **Clear** button to empty the *Documents* folder.
- To display *Control Panel* applets in menu form rather than in a window, tap in the checkbox next to *Expand Control Panel*.

Taskbar Security Tab



If you check *Disable hot keys*, the *Application from Start menu* field becomes enabled. Use this field to enter the name of the application you want to run when the user presses the *Menu* hot key: [FN/BLUE] [0].

If you have disabled hot keys, hidden the *Start Menu* and have no application configured, the *Menu* hot key brings up the *Security* dialog box to allow authorized users to access the hand-held configuration. Keep in mind that this dialog box is also displayed if an invalid application is entered in the *Application from Start Menu* field.

4.4 The Start Menu



Note: Some of the Start Menu items may be disabled based on the current Warrington security settings.

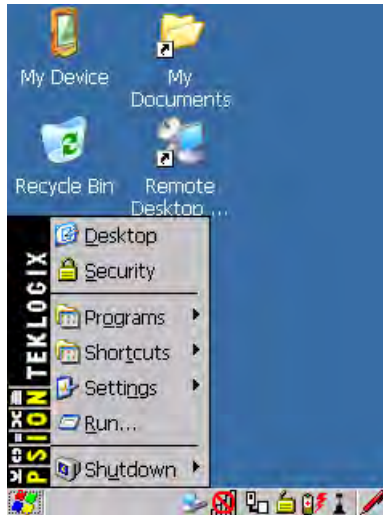
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The Start Menu

The *Start Menu* lists the operations you can access and work with. It is available from the startup desktop or from within any application.

To display the menu:

- Press [FN/BLUE] [.] (period).



Note: Tap on the item in the menu with which you want to work.

If you're using the keyboard:

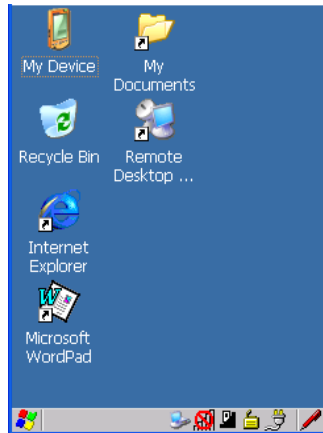
- Use the arrow keys to highlight a menu item, and press [ENTER], or

If the menu item has an underlined character:

- Type the underlined alpha character. For example, to display the *Security* dialog box, type the letter 's'.

4.4.1 The Desktop

Choosing *Desktop* in the *Start Menu* displays the Warrington desktop.



4.4.2 Security Settings

Choosing the *Security* option from the *Start Menu* displays a dialog box in which you can define the access level for the Warrington: *Supervisor* or *User*.

Figure 4.3 Security Levels



Assigning The Supervisor Security Level

The security level is represented by an icon in the shape of a lock in the taskbar. The security levels define the options accessible to the operator in the *Start Menu* and the *taskbar*. By default, the security level is set to *User*, restricting access to only the most basic *Start Menu* items.

To allow access to all the *Start Menu* and *taskbar* options:

- In the *Security Level* dialog box, tap on the radio button next to *Supervisor*.

- In the *Password* field, type the Supervisor level password. The default password is **123456**.
- Tap on **OK**. You can now access all menu items in the *Start Menu* along with the icons in the taskbar.

Changing A Password



Note: Keep in mind that this is the same password as that assigned through the Password control panel applet. Refer to “Control Panel Icons” on page 80.

To assign a password:

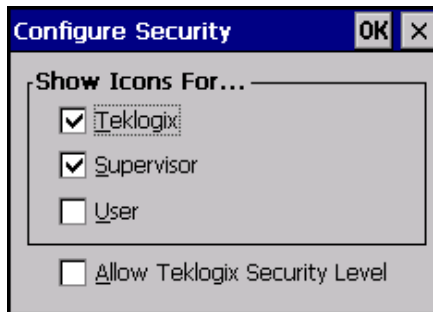
- Choose a *security level*, and enter the **existing password** in the *Password* field.
- Tap on the **Set Password** button.

A dialog box labelled *Password Properties* is displayed.

- Type the new password in the *Password:* text box (all keyboard characters are valid).
- In the *Confirm Password:* text box, retype the new password.

Configuring Security

Choosing the **Configure** button displays the *Configure Security* dialog box.



This dialog box allows you to determine which security levels will have an associated icon displayed in the taskbar. By default, a security icon is not displayed for user-level security.



Note: It is recommended that you enable ‘Allow Teklogix Security Level’ so that authorized Psion Teklogix service personnel can access your unit should it require maintenance.

4.4.3 Programs

- Choose **Programs** to display a sub-menu of options.

Figure 4.4 Programs Sub-Menu

ActiveSync®

This option allows you to connect to another device using ActiveSync.

Demo

This folder contains the *Demo Scanner*, *Demo Signature* and *Demo Sound* applications. *Demo Scanner* can be used to test how the hand-held reads and writes RFID tags. *Demo Signature* allows you to capture a signature written on the screen with your stylus and save it to a file. *Demo Sound* allows you to record and playback. The ‘Sample Rate’ and the ‘Bits Per Sample’ are the rates at which the sound will be recorded. Sounds recorded at the higher sample rate or bits per sample will be higher quality sound but will require more file storage space. Lower sample rates and/or bits per sample produces a smaller file, but the sound quality suffers. The record and play buttons operate in the same as on any recording device. The X icon deletes the sound and the *diskette* icon allows you to save your sound.

Command Prompt

Command Prompt is used to access the DOS command prompt. At the prompt, you can type DOS commands such as *dir* to display all the directories in the drive.

Internet Explorer

The Warrington is equipped with Microsoft Internet Explorer for Windows CE 5.0. You can access the *Internet Options* icon through the *Start Menu* under *Settings>Control Panel* or by double-tapping on the desktop *Internet Explorer* icon.

Microsoft WordPad

The *Microsoft WordPad* is a basic word processor used to create, edit, view and print text documents. You can access this option from the *Start Menu* under *Programs*> *Microsoft WordPad*.

Remote Connect

Remote Connect is a Warrington application used to connect to a Windows Terminal Server so that you can run a “session” on the Server machine using the Warrington (Windows CE 5.0 device). “Remote Connect” on page 79 provides a website with details about this option.

Windows Explorer

The *Windows Explorer* installed on your Warrington is consistent with all Windows CE 5.0 devices. You can access this option from the *Start Menu* under *Programs*> *Windows Explorer*.

4.4.4 Shortcuts



System Tray

If your touchscreen is not enabled, you can use the *System Tray* option to access the icons in the taskbar at the bottom of the screen. The taskbar displays indicators such as a radio signal icon and the security level. These indicators are attached to dialog boxes that provide additional information.

- Choose **Shortcuts**>**System Tray**.

Using the icons in the taskbar, you can either display the *Control Panel* dialog box associated with an icon, or you can view a “tooltip”. A tooltip provides the status of each icon.

- Tap and hold the stylus on an icon to display the icon's tooltip. Double-tap on the icon to open the *Control Panel* dialog box associated with the icon.

On the keyboard:

- Press [FN/BLUE] [,] to display the *Start Menu*.
- Choose **Shortcuts** from the *Start Menu*, and then press the [RIGHT] arrow key to display the sub-menu.
- Choose **System Tray** in the sub-menu.
- Use the arrow keys to highlight the icon in the taskbar about which you'd like more information. As each icon is highlighted, a tooltip is displayed.
- To display the associated *Control Panel* dialog box, press [ENTER].

Cycle Tasks

When *Cycle Tasks* is selected (and the Task Manager is not open), you can cycle through active applications.

To cycle through your active applications:

- Choose **Shortcuts>Cycle Tasks**, or

Press [ALT] [TAB].

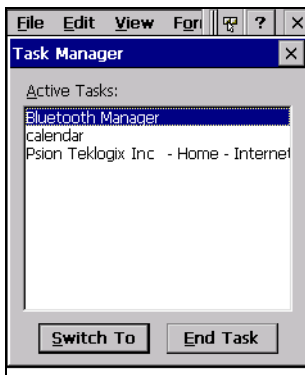
Task Manager

The *Task Manager* allows you to switch to another task or to end an active task. To display the task manager window:

- Tap on **Shortcuts>Task Manager**, or

Press [ALT] [ESC].

Figure 4.5 Task Manager



4.4.5 Settings

The *Settings* sub-menu includes the following settings: *Control Panel*, *Network and Dial-up Connections*, and *Taskbar and Start Menu*.

Figure 4.6 Settings Sub-Menu



Control Panel

The *Control Panel* contains applets used to configure hardware, the operating system and the shell. If your Warrington is running with the Psion Teklogix TekTerm application or another application, additional configuration applets may appear in the *Control Panel*.

Network And Dial-Up Connections

The *Network and Dial-up Connections* window allows you to configure the Warrington radio or execute an existing configuration. Refer to “Configuring The Murata 802.11b/g Radio” on page 23 for radio setup details.

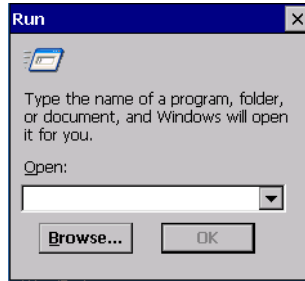
Taskbar And Start Menu

The *Taskbar and Start Menu* option displays a dialog box in which you can customize the taskbar, choosing which options will be displayed. Refer to “Customizing The Taskbar” on page 42 for additional details about this option.

4.4.6 Run

Choosing the *Run* option from the *Start Menu* displays a dialog box in which you can enter the name of the program, folder or document you want to open or launch.

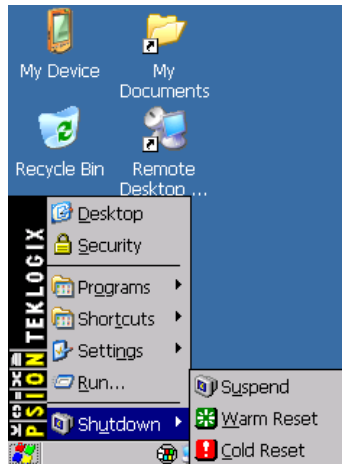
Figure 4.7 Run Dialog Box



4.4.7 Shutdown

The *Shutdown* menu includes these options: *Suspend* and *Warm Reset*.

Figure 4.8 Shutdown Sub-Menu



*Note: This menu varies slightly depending on the security level chosen. When the Warrington is set to **User level**, the Shutdown option is replaced by **Suspend**. A sub-menu is not available.*

Suspend

The *Suspend* option suspends the Warrington immediately. This is equivalent to turning the hand-held off.

Warm Reset

The *Warm Reset* option resets the Warrington, leaving all saved files and (registry) settings intact. Any unsaved data is lost.

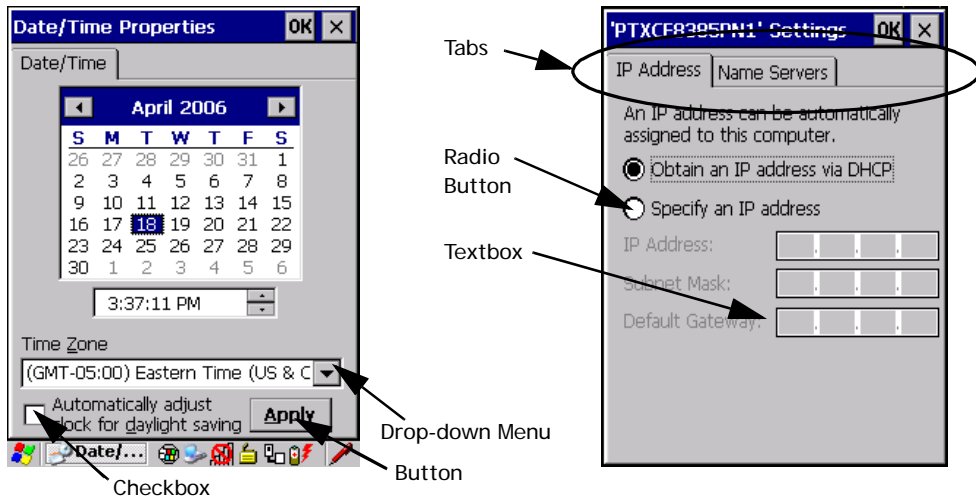
Cold Reset

The *Cold Reset* option resets the Warrington, clearing all files not stored in permanent memory; however, the registry settings are saved.

4.5 Using A Dialog Box

A dialog box (like the samples in Figure 4.9 on page 52) appears when you need to make selections and enter further information. You can move between dialog items by tapping on them with your stylus, or by pressing the arrow keys and the [TAB] key ([SHIFT] [TAB] moves the cursor backwards).

Figure 4.9 Dialog Boxes



Note: You can use the stylus to tap on an element in a dialog box to select or deselect it, display drop-down menus, save your selections, and so on.

Dialog boxes contain one or more of the following elements:

Tab: A tab separates different elements of a dialog box. Press the [TAB] key until a tab in the dialog box is highlighted. To display adjoining tabs, press the [RIGHT] or [LEFT] arrow

key. To display the information in the next tab from anywhere in the window, press [CTRL] [TAB].

Textbox: A textbox requires that you type information. Press the [TAB] key to highlight the textbox and then type the appropriate information.

Drop-down: This type of menu is identified by up and down arrows next to the drop-down menu to indicate that additional options are available. Press the [TAB] key to highlight the menu, and use the arrow keys on your keyboard to cycle through the options.

Checkbox: This box allows you to select or deselect an option. To select or deselect a checkbox, press the [TAB] key to highlight the checkbox, and press the [SPACE] key to select or deselect it.

Radio buttons: These buttons allow you to choose from a number of options. For example, in the sample screen in Figure 4.9 on page 52 you can choose to *Obtain an IP address via DHCP* or *Specify an IP address*. Press the [TAB] key to highlight a radio button option, and then select a radio button by pressing the arrow keys to highlight the appropriate option.

Buttons: This type of button allows you to *Save*, *Delete* and so on the options you've chosen in a dialog box. Use the [TAB] key to highlight the button you want to use. Press the [ENTER] key to activate it.

Saving Your Choices: Once you've made all your changes, press the [ENTER] key to save your changes and exit the window.



Note: A dialog box item that is displayed in grey text indicates that it is not currently available.

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5.1 Features Of The Warrington Hand-Held Computer

Figure 5.1 Front View



Figure 5.2 Back View



5.2 The Battery

The hand-held operates with a Lithium Ion battery pack, Model No. WA3006. Preparing the unit for operation requires that a battery pack be charged and installed in the Warrington.

5.2.1 Battery Safety



Important: Before attempting to install, use or charge the battery pack, it is critical that you review and follow the important safety guidelines in Chapter 1: “Approvals & Safety Summary”.

5.2.2 Removing The Battery Pack



Important: Always switch the unit off before opening the battery cover to remove the battery.

For details about unlatching the battery cover, review “Installing The Battery And Switching The Unit On” on page 22.

5.2.2.1 Battery Swap Time

Assuming the default power saving parameters and battery reserve level have not been altered, battery swap time is a minimum of 10 minutes—you will not lose data if the battery is replaced within this time frame.

The *Suspend Threshold* adjustment in the *Power Properties* tab allows you to determine the battery capacity at which the hand-held will be shut down. If left at the default value, *Maximum Operating Time*, the unit will run until the battery is completely empty; the RAM is only backed up for a short period of time. If you choose *Maximum Backup Time*, the hand-held shuts off with more energy left in the battery so RAM can be backed up for a longer period of time.

Refer to “Suspend Threshold” on page 102 for details about reserving battery power for data backup purposes.

5.2.3 Charging The Battery

Batteries shipped from the factory are charged to approximately 40% of capacity. They must be fully charged prior to use.

5.2.3.1 Chargers And Docking Stations



Important: FOR DETAILED INFORMATION about chargers and docking stations, refer to Appendix 7: “Peripheral Devices & Accessories”.

Lithium Ion battery packs must be charged before use. These batteries can be charged with a variety of chargers and docking stations. These include:

- AC wall adaptor (Model # PS1050-G1)—operates as an AC power source and when plugged in, also charges the battery installed in the unit.
- Desktop Docking Station (Model # PX3001)—operates as both a charger and a docking station. Operating as a charger, both the battery installed in the hand-held and a spare battery can be charged simultaneously.
- Quad Docking Station—(Model # PX3001) can charge the battery of up to four Warringtons inserted in the docking station.

It can take up to 5 hours to charge a battery. The Warrington intelligent charging system protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity.



Note: Refer to “Monitoring The Battery And Maximizing Run Time” on page 70 for additional information about the battery.



Important: *To avoid damaging the battery, chargers will not begin the charge process until the battery temperature is between 0°C to 45°C (32°F to 113°F).*

5.3 Switching The Hand-Held On And Off

- To switch the unit on, press and hold down the [ENTER] key for at least one second.
- When the LED flashes green, release the [ENTER] key.

The startup screen is displayed.



Note: If the Warrington is in suspend state, pressing [ENTER] ‘wakes’ the unit from this state. The screen in which you were working before the computer entered suspend state is displayed.

Switching Off The Warrington (Suspend)



Important: *Keep in mind that turning off the Warrington does not result in a complete reboot; rather, the unit enters a power-saving, “suspend” state. When the unit is turned on from suspend state, operation resumes within a few seconds.*

- To switch the unit off, press [FN/BLUE] [ENTER].

5.4 The Keyboard

Two keyboard options are available:

- 48-key alpha-numeric keyboard. This keyboard is only available with *connected* hand-holds – units equipped with 802.11b/g radios.
- 26-key numeric keyboard. This option is available for both variants of Warrington – *connected* hand-holds (described above) and *unconnected* or batch hand-holds *not* equipped with 802.11b/g radios.

Most of the keys on these keyboards operate much like a desktop computer. Where a key or key function is not consistent with the PC keyboard, the differences are noted.

The [FN/BLUE] and [FN/ORANGE] modifier keys provide access to additional keys and system functions. These functions are colour coded in *orange* and *blue* print above the keyboard keys.

5.4.1 Modifier Keys

The [SHIFT], [CTRL], [ALT], [FN/BLUE] and [FN/ORANGE] keys are *modifier* keys. Pressing a modifier key changes the function of the next key pressed.

The [SHIFT], [CTRL] and [ALT] keys operate much like a desktop keyboard except that they are not chorded (two keys held down simultaneously). The modifier key must be pressed first followed by the key whose function you want modified.

5.4.1.1 Activating Modifier Keys

When a modifier key is pressed once, it is displayed in lowercase letters in the taskbar at the bottom of the hand-held screen. For example, if the [CTRL] key is pressed, *ctrl key* is displayed at the bottom of the unit screen. Once the next key is pressed, the modifier key becomes inactive and disappears from the taskbar.

Keep in mind, however, that the ‘One Shot’ function allows you to determine how many key presses will lock a modifier key ‘on’ – one press or two. Refer to “Keyboard One Shot Modes” on page 90 for details.

5.4.1.2 Locking Modifier Keys

When a modifier key is pressed twice, it is ‘locked’ on. A ‘locked’ modifier key is displayed in uppercase letters in the taskbar. For example, pressing the [CTRL] key twice locks it on – it is displayed as **CTRL KEY** in the taskbar at the bottom of the computer screen.

The locked modifier key will remain active until it is pressed a third time to unlock or turn it off. Once a modifier key is unlocked, the uppercase representation at the bottom of the screen is no longer displayed.

5.4.2 The Keys

The [SHIFT] Key

The [SHIFT] key is used to display uppercase alpha characters and provide access to the symbols above the numeric keys.

The Arrow Keys

The Arrow keys move the cursor around the screen in the direction of the arrow: up, down, left and right. The cursor is the flashing box or underline character that indicates where the next character you type will appear.

The [SPACE] Key

Pressing this key inserts a blank space between characters. In a Windows dialog box, pressing the [SPACE] key enables or disables a checkbox.

The [BKSP/DEL] Key

The [BKSP] key (sometimes referred to as destructive backspace) moves the cursor one character to the left, erasing the incorrectly entered key stroke.

The [DEL] key ([FN/BLUE] [BKSP]) erases the character at the cursor position.

The [CTRL] And [ALT] Key

The [CTRL] and [ALT] keys modify the function of the next key pressed and are application-dependent.

The [TAB] Key

Typically, the [TAB] key moves the cursor to the next field to the right or downward.

The [ESC] Key

Generally, this key is used as a keyboard shortcut to close the current menu, dialog box or activity and return to the previous one.

The [SCAN] Key

All units are equipped with a yellow [SCAN] key. For units that *do not have* internal scanners, this key can be re-mapped to another function.

5.4.3 Function Keys And Macro Keys

In addition to the standard keyboard functions, the Warrington supports Function keys and Macro keys. All Function and Macro keys can be custom defined for each application.

5.4.3.1 Function Keys

The Warrington keyboard is equipped with a total of 14 function keys. Function keys [F1] to [F4] are located near the top of the keyboard on the [TAB], [ALT], [CTRL] and [ESC] keys and are directly accessible—a key combination is not required. Ten additional function keys

are colour coded in blue print on the unit body; these keys are accessed by executing a key combination, [FN/BLUE] followed by the appropriate numeric key.

For example, to access function key [F7]:

- Press the [FN/BLUE] key followed by the [7] key—the numeric key to which function key [F7] is mapped.
- To access function key [F8], press [FN/BLUE] [8], and so on.

5.4.3.2 The Macro Keys

While macro keys are not physically stamped on the keyboard, up to 12 macro functions can be added using the *Scancode Remapping* function. Refer to “Scancode Remapping” on page 94 for details about mapping keys. Refer to “Keyboard Macro Keys” on page 91 for details about programming characters in a Macro key.

5.4.4 26-Key Keyboard: Accessing Alpha Keys

On numeric 26-key keyboards, numeric keys are directly accessible, and all alpha characters are printed on the unit plastic in orange characters above the numeric keys. An indicator in the left corner of the taskbar displays the currently selected character. To access an alpha character, first press the [FN/ORANGE] key and then press the numeric key above which the alpha character you want to type is printed.

Choosing A Single Alpha Character

The examples below illustrate how to access, A, B, and C, all of which are printed in orange characters above the numeric key [2].



Important: *The letters you choose appear in the taskbar, providing a visual indicator of which letter will be displayed on the screen.*

To choose the letter **a**:

- Press the [FN/ORANGE] key, and press the numeric key [2].



Note: *To choose the second, third or fourth alpha character assigned to a numeric key, you may want to lock the [FN/ORANGE] key ‘on’. By default, the [FN/ORANGE] key is locked ‘on’ when pressed once. However, depending on how your unit is set up in the ‘One Shots’ tab, you may find that you need to press the [FN/ORANGE] key twice to lock it ‘on’. Refer to “Keyboard One Shot Modes” on page 90 for details.*

To choose the *second* letter in the sequence—in this example, the letter **b**:

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- Lock the [FN/ORANGE] key ‘on’. ‘ORG KEY is displayed in upper-case characters in the taskbar to indicate that this key is locked ‘on’.
- Press numeric key [2] twice to display the letter **b**.

To choose the third letter in the sequence—in this example, the letter **c**:

- Lock the [FN/ORANGE] key ‘on’.
- Press numeric key [2] *three times* to display the letter **c**.



Note: Keep in mind that there is a timeout if you pause for one second between key presses when selecting the second, third or fourth letters on a key. For example, suppose you want to type the letter ‘c’ – you’d need to press the [2] key three times. With the [FN/ORANGE] key locked ‘on’, if you press [2] twice and then pause between key presses for 1 second, the letter ‘b’ will be selected automatically.

Creating Uppercase Letters

To display a capital letter:

- Press the [FN/ORANGE] key and then the [SHIFT] key before typing the alpha character.



Note: If you want to use uppercase characters at all times, press [FN/BLUE] [SHIFT]. An icon of an uppercase ‘A’ is displayed in the taskbar indicating that all letters will be displayed as uppercase characters.

Choosing Multiple Alpha Characters

- Lock the [FN/ORANGE] key ‘on’.

Each time you press a numeric key from [2] through [9], an alpha character will be displayed on the screen. Remember that you can refer to the softkey bar for a visual indication of which alpha key will be displayed on the screen.



Important: *Once you have finished typing alpha characters, remember to turn off or unlock the [FN/ORANGE] key.*

5.4.5 The Keypad Backlight

The intensity of the keypad backlight and the conditions under which this backlight is activated can be configured using the *Keyboard* icon in the Windows CE 5.0 *Control Panel*. The behaviour of the keypad backlight is tailored in the *Keyboard Properties* dialog box. Refer to “Keyboard Backlight” on page 89 for details about this option.



Note: Keep in mind that this option may be restricted to supervisory use only.

5.5 The Display

Warrington hand-helds are equipped with display backlighting to improve character visibility in low light conditions. The backlight switches on when a key is pressed or the screen is tapped.

5.5.1 Adjusting The Display Backlight

The *Display Properties* dialog box in the *Control Panel* allows you to determine the behaviour of the display backlight and its intensity. Refer to “Display Backlight” on page 84 for details about the Display Properties dialog box.

5.5.2 Calibrating The Touchscreen

If your Warrington touchscreen has never been calibrated, or if you find that the stylus pointer is not accurate when you tap on an item, use the *Stylus Properties* dialog box in the *Control Panel* to recalibrate the screen.

- In the *Control Panel*, choose the **Stylus** icon to display the *Stylus Properties* window.

Figure 5.3 Stylus Icon



- Select the **Calibration** tab, and then choose the **Recalibrate** button.

Figure 5.4 Calibration Screen



- Follow the directions on the calibration screen to calibrate the screen.

5.6 Warrington Hand-Held Indicators

The Warrington uses an LED (Light Emitting Diode), onscreen messages and audio tones to indicate the various conditions of the hand-held, the batteries, the scans and so on.

5.6.1 LEDs

A tri-coloured LED is located on the upper-left side of the unit, above the screen. The green LED is the battery charge indicator; the yellow LED indicates an application; the blue LED indicates whether the radio is on or off. When you press [ENTER], the LED flashes green to indicate that the unit has been powered up. The LED table following outlines the behaviour of the LED while the unit is docked in a charger.

Keep in mind that the application running on the Warrington can dictate how the LED operates. Review the documentation provided with your application to determine LED behaviour.



If the unit is attached to an external power supply, the hand-held's LED reflects the battery charge status.

Table 5.1 Warrington LED Behaviour

LED Behaviour	Charge Status
Solid Green	Charge complete.
Fast Blinking Green	Charge in progress. Battery charged to less than 80% capacity.
Slow Blinking Green	Battery charged to greater than 80% of capacity.
Solid Red	Temperature outside charge range (0°C to 50°C).
Blinking Red	Battery is not charging. Battery fault.

5.6.2 Audio Indicators

The audio speaker provides a variety of sounds when a key is pressed, a keyboard character is rejected, scan input is accepted or rejected, an operator’s entry does not match in a match field or the battery is low. To specify how you want your Warrington to respond under various conditions, refer to “Volume And Sound Properties” on page 98.

The volume keys are located above the [UP ARROW] and [DOWN ARROW] keys. The increase volume key is labelled with a plus symbol  and the decrease volume key is labelled with a minus symbol .

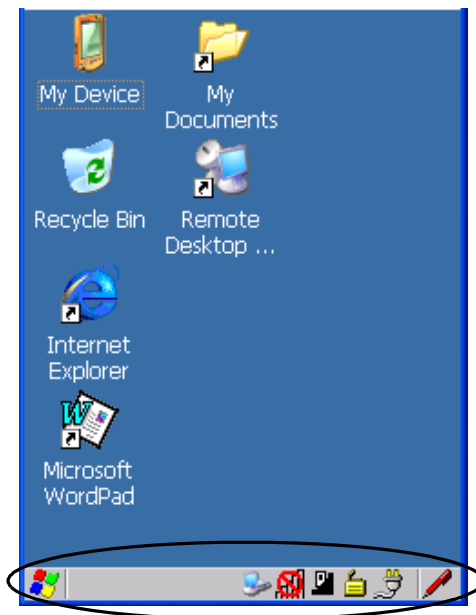
5.6.2.1 Adjusting The Warrington Speaker Volume

- Lock the [FN/BLUE] key ‘on’ and then, press [UP ARROW] – the *increase volume key* or [DOWN ARROW] – the *decrease volume key* until the volume meets your requirements.
- Remember to press the [FN/BLUE] key again to turn it ‘off’.

5.6.3 Onscreen Indicators

The taskbar at the bottom of the screen displays a variety of system status indicators.

Figure 5.5 Taskbar



The taskbar changes dynamically, and only those icons that are applicable are displayed. For example, if a radio is not installed in your Warrington, the radio signal icon is not displayed in the taskbar.



Windows® Start Button

If you are using the touchscreen, you can either tap the Windows icon at the bottom left of the screen, or press [FN/BLUE] [.] (period) to display the *Start Menu*, and then tap on the desired application.



Modifier Key Indicators

[SHIFT], [CTRL], [ALT], [FN/BLUE] and [FN/ORANGE] are modifier keys that when pressed, are displayed in the taskbar to indicate that they are active. If a modifier key is locked 'on', it is displayed in *uppercase* characters. For example, if the [FN/BLUE] key is locked on, it is displayed as **BLUE KEY** in the taskbar. A locked modifier key remains active until it is pressed again to unlock or turn it off.

If a modifier key has been pressed but is not locked on, it is displayed in the taskbar in *lowercase* characters – for example, **blue key**. It will remain active only until the next key is pressed at which point, the modifier key is turned off.



Note: The locking function of the modifier keys can be set up so that pressing one of these keys once will lock the key 'on'. They can also be set up so that they must be pressed twice to be locked 'on'. Refer to "Keyboard One Shot Modes" on page 90 for details.



Battery Gauge

The battery shaped icon displayed in the taskbar provides a visual indication of the remaining battery power. The icon acts as a meter that is either full, at three-quarter level, half, quarter level or empty.

When the battery level is low—approximately 15 minutes from empty—a warning window pops up. When the battery power is completely depleted, a final warning window indicates that the Warrington will be powered down.

If the Warrington is using external AC power, an AC icon is displayed in the taskbar.



Full



75%



50%



25%



Empty



AC Connection



Battery Charge

The battery charge icon is displayed in the taskbar when the hand-held battery is being charged.



802.11 Radio Signal Quality

Increasing radio signal quality is represented by longer, filled bars within this icon.



Good
Reception



Weak
Reception



No Radio
Link



Docking Device

When a hand-held is inserted in a docking station or charger, an associated icon appears in the taskbar.



Bluetooth Radio

This icon displayed in the taskbar represents the installed *Bluetooth* radio.



Security Level

Security levels can be set to limit user access. In addition, applications can be restricted to prevent inadvertent changes.

5.7 Monitoring The Battery And Maximizing Run Time



Note: When the main battery is at 50% capacity, a ‘low battery’ warning is displayed. When the battery is at approximately 10% capacity, a ‘very low main battery’ notification appears.

As Lithium Ion batteries age, their capacity decreases gradually, and they are generally considered depleted after approximately 2 years of use (less than 60% of original capacity remaining). Keep in mind however that heavy usage or operating the unit at temperature extremes will shorten the battery life.

Lithium Ion batteries do not require conditioning cycles and the Warrington battery system (including chargers) requires no user interaction to maintain peak performance.

To maximize the run time of your batteries, consider the following:

- The display backlight is the largest drain on the battery. Try to keep its brightness as low as possible.
- The hand-held is ‘event’ driven—that is, when the unit is not in use, it reverts to sleep mode (even when it appears to be running), saving battery power. Events include a key press, touchscreen taps and scan triggers. Power consumption is reduced if you avoid unnecessary events, and allow the unit to sleep as much as possible.
- The battery is a ‘smart battery’ with built-in intelligence.

Tapping on the *Power* icon in the *Control Panel* displays a dialog box that provides detailed information about the battery status of the main battery installed in your unit.

- When the hand-held is switched off, it goes into a low-power, suspend state but continues to draw a small amount of power from the battery. This should not be an issue unless the unit is left in suspend state for more than a week—for long-term storage, the battery should be removed from the unit.

5.7.1 Storing Batteries

Long term battery storage is not recommended. If storage is necessary:

- Always try to use a ‘first-in first-out’ approach to minimize storage time.

- Lithium Ion batteries age much faster at elevated temperatures. Store batteries at temperatures between 0 °C and 20 °C (32 °F and 68 °F).
- Always charge batteries to at least 40 to 60% before storing them. Batteries can be damaged by an over-discharge phenomenon that occurs when an empty battery is stored for a long period of time such that the cell voltage drops below a lower limit.
- To minimize storage degradation, recharge stored batteries to 40 to 60% every 4 or 6 months to prevent over-discharge damage.
- A ‘never used’ Li-Ion battery that has been stored for 3 years may have limited or no useful life remaining once put into service. Think of batteries as perishable goods.

5.8 Uploading Data In A Docking Station



Important: *Review the documentation provided with the user application installed in your Warrington before performing data uploads.*

The desktop docking station and quad docking station are typically used to upload transaction data to a server computer when a radio link is not available.



Note: Refer to “Desktop Docking Station” on page 186 for more details.

The desktop docking station can complete batch uploads to a Client USB connected PC or server. An optional 10/100baseT Ethernet module is also available.

Unlike the desktop docking station, the quad docking station supports only TCP/IP connections to a PC or server through a 10/100baseT Ethernet connection.

When a Warrington is properly inserted in a docking station, a dock icon is displayed in the navigation bar at the top of the screen. The unit also detects the presence of the Ethernet network.

5.9 Bluetooth Radio



*Note: Integrated **Bluetooth** Class II radios are standard on ‘connected’ Warringtons – that is, units equipped with 802.11 radios. On ‘unconnected’ or batch units, **Bluetooth** is an optional feature.*

The *Bluetooth* radio enables short range data communication between devices. In addition, it provides the capability to use a *Bluetooth*-enabled cellular phone as a data modem, exchanging information with other *Bluetooth* devices and providing network access. You can

also pair your hand-set with a *Bluetooth* headset. Refer to “Bluetooth Setup” on page 110 for setup details.

5.9.1 Pairing A *Bluetooth* Headset Or Other *Bluetooth* Device



*Note: If the **Bluetooth** radio is not already enabled, tap on the **Power** icon in the Control Panel, tap on the **Devices** tab and enable the **Bluetooth** radio.*

To pair a headset:

- Follow the headset manufacturer’s instructions to place the headset you want to place in pairing mode.
- In the *Control Panel*, tap on the *Bluetooth* icon choose the *Devices* tab and scan for devices in your area. (Note that if you’re pairing the device for the first time, the device scan occurs automatically—you do not need to tap on the *Scan* button to perform a scan.)

When the scan is complete, a list of devices is listed.

- Double-click on the **headset** you want to pair with. If you prefer, you can highlight **headset** and tap on the **Services** button.

A dialog box appears requesting that you enter a PIN number.

- Type your **pin number** and tap on **OK**.

A *Services* dialog box appears listing *headset*.

- Press and hold the stylus on **headset**. In the pop-up menu, choose **Active**.

Your headset is now paired. A COM/BSP port name will now appear beside the service for this device. An asterisk will appear under the *Active* list in the *Service* screen.

5.10 The MicroSD Card

A microSD card slot is available in the battery compartment. MicroSD cards provide additional, non-volatile memory to your hand-held.

5.10.1 Inserting The Card

- Switch off the Warrington.
- Remove the battery cover and the battery.
- Gently slide the SD door down and then flip it forward.
- Fit the card into the slot, pushing it inward to secure it in place.
- Flip the SD door back into place, and slide it upward to lock it.

5.11 General Maintenance

5.11.1 Caring For The Touchscreen

The top of the touchscreen is a thin, flexible polyester plastic sheet with a conductive coating on the inside. The polyester can be permanently damaged by harsh chemicals and is susceptible to abrasions and scratches. Using sharp objects on the touchscreen can scratch or cut the plastic, or crack the internal conductive coating.

The chemicals listed below must not come into contact with the touchscreen:

- sodium hydroxide,
- concentrated caustic solutions,
- benzyl alcohol, and
- concentrated acids.

If the touchscreen is used in harsh environments, consider applying a disposable screen protector (WA6110??). These covers reduce the clarity of the display slightly but will dramatically extend the useful life of the touchscreen. When they become scratched and abraded, they are easily removed and replaced.

5.11.2 Cleaning The Warrington



Important: Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.

- Use *only* mild detergent or soapy water to clean the hand-held unit.
- Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The plastic case is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.
- To clean ink marks from the keypad and touchscreen, use isopropyl alcohol.

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6.1 Remote Connect

Remote Connect is a Warrington application used to connect to a Windows Terminal Server so that you can run a “session” on the Server machine, using the Warrington (Windows CE 5.0 device).

Refer to the following website for step-by-step information about setting up this connection:

<http://www.microsoft.com/WindowsXP/pro/using/howto/gomobile/remotedesktop/default.asp>

or contact Psion Teklogix support services. (Locate the office closest to you at: www.psionteklogix.com).

6.2 The TekTerm Application

TekTerm is a powerful emulation application ideally suited for real time data transaction applications associated with mainframes and servers. The Warrington includes unique features that support TekTerm—a Psion Teklogix application that has the ability to maintain multiple simultaneous sessions with a variety of host computers. For detailed information, please refer to the *TekTerm Software User Manual*, PN 8000073.

6.3 The Control Panel

The Windows CE 5.0 *Control Panel* provides a group of icons through which you can set a variety of system-wide properties, such as mouse sensitivity, network configuration and the desktop color scheme.



Note: If you are uncertain how to move around a dialog box and make selections, review “Using A Dialog Box” on page 52.

When the Warrington boots up, the startup desktop (shell) is displayed, and any applications stored in the *Startup* folder start up immediately.

To access the *Control Panel*:

- Tap on **Start>Settings>Control Panel**.

If you’re using the keyboard:

- Press **[FN/BLUE] [.]** to display the Start Menu.
- Highlight **Settings** in *Start Menu*, and press the **[RIGHT]** arrow key to highlight the *Control Panel*.
- Press the **[ENTER]** key.

The *Control Panel* folder contains icons used in the setup of your Warrington.

Figure 6.1 Control Panel



6.4 Control Panel Icons

The *Control Panel* provides a group of icons that allow you to customize and adjust settings on your Warrington.



App Launch
Keys

App Launch Keys

By mapping keys to applications using this program, you can then launch those applications from a single key-press.



Bluetooth
Devices

Bluetooth Devices

Provides the tools to manage device pairing and configuration.



Certificates

Certificates

A public key is transmitted as part of a certificate. The certificate assigned through this icon is used to ensure that the submitted public key is, in fact, the public key that belongs to the submitter. The client checks that the certificate has been digitally signed by a certification authority that the client explicitly trusts. “Certificate Assignment” on page 109 directs you to the appropriate setup information.



Date/Time

Allows you to set the current Month, Date, Time and Time Zone on your unit.



Dialing

Dialing

Specifies dialing settings, including area code, country code, dial type and the code to disable call waiting. You can store multiple patterns—for example, ‘Work’, ‘Home’, and so on using this dialog box.



Display

Display

Changes the appearance (window colour scheme) on the unit desktop.



Error Reporting

Error Reporting

Error Reporting allows you to enable or disable Microsoft error reporting prompts.



Input Panel

Input Panel

Provides the framework for a Soft Input Panel (SIP) should you need to design your own SIP, or change some soft keyboard options.



Internet Options

Internet Options

Provides options to configure your Internet browser. You can determine items such as the default and search page that the browser applies when connecting to the Internet, the cache size, the Internet connection options, and the security level that is applied when browsing.



IPv6 Support

IPv6 Support

Refers to a new Internet Protocol specification (version 6) that has been published to use 128-bit IP addresses (replacing version 4).



Keyboard

Keyboard

Toggles character repeat on and off and specifies delay and rate for repeated characters. This applet also allows you to adjust the keyboard backlight threshold and intensity, define *One-Shot Mode*, remap keys using *Scancode Remap* and program *Macro Keys*.



Manage Triggers

Manage Triggers

Allows multiple-scanner trigger management, including the ability to configure each of the trigger buttons. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.



Network and Dial-u...

Network And Dial-up Connections

Displays a network window from which the Warrington 802.11g radio can be configured and an existing configuration can be executed. Refer to “Configuring The Murata 802.11b/g Radio” on page 23 for details.



Owner

Owner

Provides fields in which you can specify owner information. A *Notes* tab allows additional information to be entered and displayed when the unit is powered up. *Network ID* tab information is used to access network resources. (This information should be provided by your System Administrator.)



Password

Password

Allows you to assign a password to restrict access to elements of the unit. Once assigned, password access cannot be circumvented so it is important that you write down your password and keep it in a safe place. Refer to “Security Settings” on page 45 for details.



PC Connection

PC Connection

Enables direct connections to a desktop computer. Selecting the *Change Connection* button allows you to change the type of direct connect to your PC.



Power

Power

Displays battery pack power status. (Alternately, battery status can be accessed through the taskbar.) Additional tabs allow you to determine suspend states, specify a suspend threshold and, when seated in either the Combo Dock or Quad Dock, determine whether or not a battery that requires it can be recalibrated. This dialog box also allows you to activate card slots and built-in devices. (Refer to “Devices” on page 103 for details.)



RDC Licenses

RDC Licenses

The Terminal Services license server stores all license tokens that have been installed for a group of terminal servers and tracks licenses issued. The Remote Desktop Licenses (RDC) application displays license ‘tokens’ for devices that connect to a Terminal Server.



Region & Language

Region & Language

Allows you to specify the local language that is to be displayed on the hand-held screen along with the format of numbers, currency, time and date for your region.



Remove Programs

Remove Programs

Lists the programs that can be removed from your unit. To remove a program, select it and then click on the **Remove** button.



Storage Manager

Allows the user to view information about the storage devices that are present, such as SD-MMC flash cards. For details, see page 128.



Stylus

Stylus

Adjusts how Windows CE 5.0 recognizes your double-tap (as slow or rapid successive taps). In the *Calibration* tab, you can recalibrate your touchscreen by tapping on the **Recalibrate** button and following the directions on the screen.



System

System

Displays system and memory properties. In the *Memory* tab, you can allocate memory between storage memory and program memory.



Teklogix Error Handling Service

Teklogix Error Handling Service

Teklogix Error Handling Service is an error diagnostic tool.



Teklogix Scanners

Teklogix Scanners

Provides scanner parameters and the bar code symbologies that the Warrington scanner will successfully read.



Total Recall

Total Recall

Provides access to a backup and restore utility to maintain applications and settings over warm reboots.



TweakIT Settings

TweakIT Settings

Allows you to change Advanced System Settings (interface, network, and servers), User System Settings (display font size), and provides the Registry Editor.



Volume & Sounds

Volume & Sounds

Allows you to adjust the volume of the sound emitted to indicate events like warnings, key clicks and screen taps.

6.5 Basic Setup

6.5.1 Display Properties

- In the *Control Panel*, choose the **Display** icon.

Figure 6.2 Choosing The Display Icon



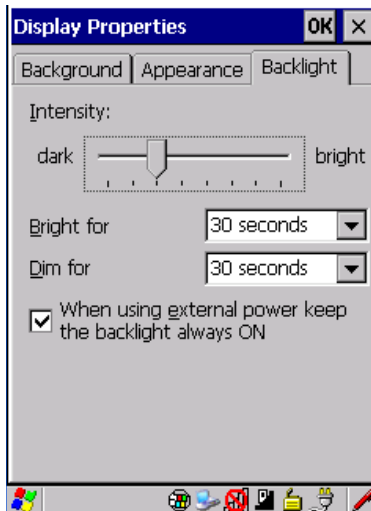
6.5.1.1 Display Backlight

The backlight is activated for a configurable amount of time when the Warrington is in use (key press, scanner trigger, or data received from the host). The *Display Properties* dialog box in the *Control Panel* allows you to specify the intensity of the backlight along with how long the display will maintain the specified intensity.



Note: Keep in mind that this option may be restricted to supervisory use only.

- In the *Display Properties* dialog box, open the **Backlight** tab.



Note: Backlight changes take effect immediately. You do not need to reset the unit. To maximize battery run time, keep the display backlight brightness and active durations as low as possible.

Intensity

This parameter is used to adjust the light intensity of the Warrington backlight. Sliding the bar to the left lowers the light intensity, and sliding it to the right raises the intensity.

Bright For

The value chosen from this drop-down menu determines the duration of time that the backlight stays on at the configured intensity after the last user action (keypress, scan trigger).

Dim For

The value chosen from this drop-down menu determines the duration of time that the backlight stays on at half the configured intensity (dimmed backlight) after expiration of the *Bright For* delay and as long as no user action takes place (such as a keypress or scan trigger). At the expiration of the *Dim For* duration, the display backlight shuts off.

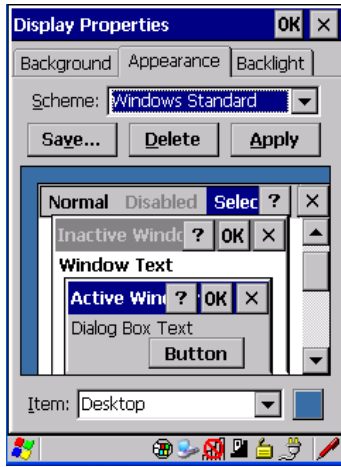
External Power Checkbox

When you select the checkbox next to *When using external power keep the backlight always ON*, the backlight remains on at the configured intensity when the Warrington is operating with external power (not battery power). If the Warrington is drawing power from its bat-

tery, this option is ignored and the other parameters defined in *Display Properties* dialog box are used.

6.5.1.2 Display Appearance

- In the *Display Properties* dialog box, open the **Appearance** tab.



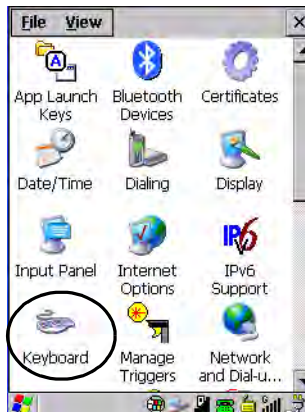
This dialog box allows you to customize the display colour scheme.

6.5.2 Keyboard Properties

This icon displays the *Keyboard Properties* dialog box in which you can adjust the repeat rate of the keys, the intensity of the keyboard backlight and the behaviour of the [FN/BLUE] and [FN/ORANGE] modifier keys. This dialog box also allows you to define macro keys and Unicode characters.

- In the *Control Panel*, choose the **Keyboard** icon.

Figure 6.3 Choosing The Keyboard Icon

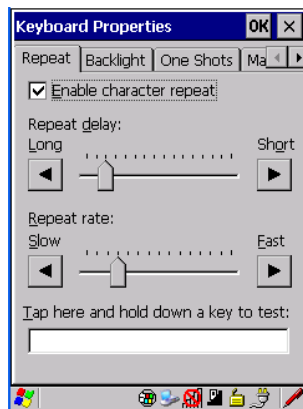


6.5.2.1 Key Repeat



Note: These settings apply when a key is held down continuously.

- In the *Keyboard Properties* dialog box, open the **Repeat** tab.



Repeat Delay

The value assigned for this parameter determines the delay in milliseconds between repeat characters. Sliding the *Repeat Delay* bar to the left increases the delay between key repeats, and sliding the bar to the right shortens the repeat delay time.

Repeat Rate

The value assigned for the *Repeat Rate* parameter determines how quickly the key you press repeats and is measured in characters per second (cps). Sliding the bar to the left slows the repeat rate, and sliding the bar to the right increases the repeat rate.



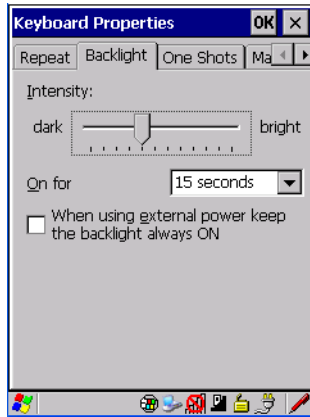
Note: Use the field at the bottom of this dialog box to test the repeat delay and rate settings you've chosen.

6.5.2.2 Sequence

This tab determines the allowable pause between alpha key presses on a numeric keypad. For example, suppose you want to type the letter 'c' – you would need to press the [2] key *three* times. With the [ORANGE] key locked 'on', if you press [2] twice and then pause between key presses for 1 second, the letter 'b' will be selected automatically. Moving the *Sequence* slider to the right increases the pause time between alpha key presses.

6.5.2.3 Keyboard Backlight

- In the *Keyboard Properties* dialog box, open the **Backlight** tab.



Intensity

This parameter is used to adjust the light intensity of the Warrington keyboard backlight. Sliding the bar to the left darkens the keyboard backlight intensity, and sliding it to the right lightens the intensity.

ON For

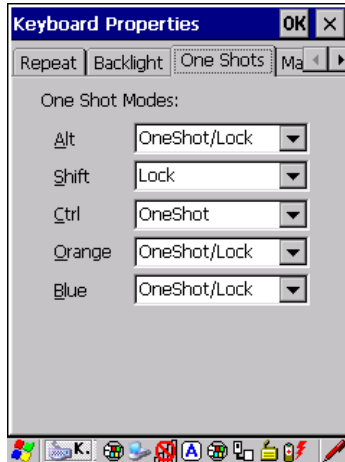
The value chosen from this drop-down menu determines the duration of time that the keyboard backlight stays on when a unit is not in use.



Note: Tapping in the checkbox next to ‘When using external power, keep the backlight always ON’ forces the keypad backlight to remain on when the unit is operating with external power.

6.5.2.4 Keyboard One Shot Modes

- In the *Keyboard Properties* dialog box, open the **One Shots** tab.



The options in this tab allow you to determine how modifier keys on your Warrington behave. For each modifier key—[ALT], [SHIFT], [CTRL], [FN/ORANGE] and [FN/BLUE] – you have the following options in the drop-down menu: *Lock*, *OneShot*, and *OneShot/Lock*.



*Note: Keep in mind that checking the taskbar lets you know whether or not these keys are locked on. For example, if the [FN/ORANGE] key is locked 'on', the taskbar at the bottom of the screen displays it in uppercase characters, **ORANGE KEY**. If this key is displayed in lowercase characters in the taskbar, you'll know that the **orange key** is not locked. It will become inactive following a key press.*



Important: *Once you've assigned a One Shot mode to a modifier key, you need to tap on the OK button at the top of the tab to activate your selection.*

Lock

If you choose *Lock* from the drop-down menu, pressing a modifier key once locks it 'on' until you press the modifier key a second time to unlock or turn it off.

OneShot

If you choose *OneShot*, the modifier key remains active only until the next key is pressed.

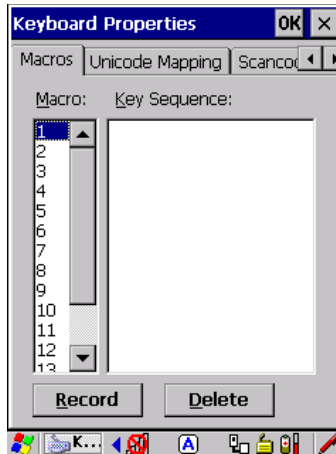
OneShot/Lock

OneShot/Lock allows you to combine these functions. When you choose this option and you press the modifier key once, it remains active only until the next key is pressed.

If you press the modifier key twice, it is locked 'on', remaining active until the modifier key is pressed a third time to turn it 'off'.

6.5.2.5 Keyboard Macro Keys

- In the *Keyboard Properties* dialog box, open the **Macros** tab.



A macro has 200 programmable characters (or “positions”). The macro keys can be programmed to replace frequently used keystrokes, along with the function of executable keys including [ENTER], [BKSP] and [DEL] ([FN/BLUE]-[BKSP]), function keys and arrow keys.

Recording And Saving A Macro

On the *36-key Warrington*, you can program a maximum of 6 macro keys.

- In the *Macro* menu highlight a macro key number, for example macro 1, to assign a macro to macro key [M1]. Choose the **Record** button.

Preliminary Draft

A message screen is displayed instructing you to *Enter Key Strokes to Record*



- Type the macro sequence you want to assign to the Macro key. You can type text and numbers, and you can program the function of special keys into a macro.
- When you've finished recording your macro sequence, press the key sequence: [CTRL] [ALT] [ENTER], or choose the **Stop Recording** button.

A new screen called 'Verify Macro' displays the macro sequence you created. The *Save* button is highlighted.

- Press [ENTER] to save your macro, or highlight CANCEL and press [ENTER] to discard it.

Executing A Macro

To execute a macro:

- Press the macro key to which you've assigned the macro. For example, if you created a macro for *macro key 1*, press [M1] to execute the macro.

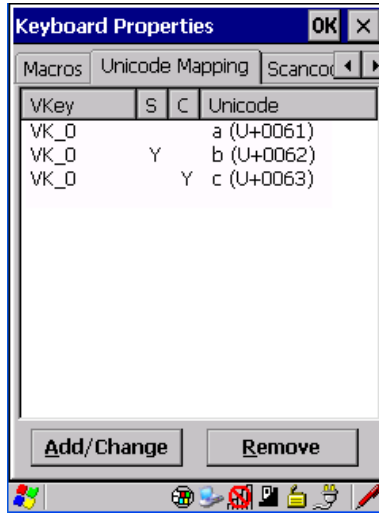
Deleting A Macro

To delete a macro:

- In the *Macros* tab, highlight the **macro number** you want to delete.
- Choose the **Delete** button.

6.5.2.6 Unicode Mapping

- In the *Keyboard Properties* dialog box, open the **Unicode Mapping** tab.



The *Unicode Mapping* tab is used to map combinations of virtual key values and [CTRL] and [SHIFT] states to Unicode™ values. This tab shows the configured Unicode character along with the Unicode value. For example, the sample screen above shows “a (U+0061)” indicating that the character “a” is represented by the Unicode value “0061”, and so on. Keep in mind that Unicode configurations are represented as hexadecimal rather than decimal values.

All user-defined Unicode mappings are listed in the *Unicode Mapping* tab in order of virtual key value, and then by order of the shift state. If a Unicode mapping is not listed, the Unicode mapping is mapped to the default Unicode value.

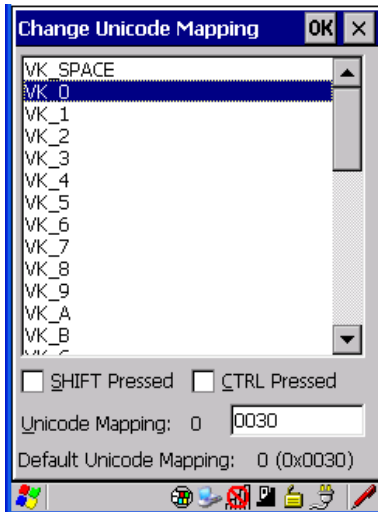
Adding And Changing Unicode Values



Important: *Changes to Unicode mappings are not saved until you exit the Keyboard Properties dialog box.*

- Choose the **Add/Change** button

Figure 6.4 Adding And Changing Unicode Values



- Highlight a value in the Unicode mapping list. In the sample screen above, a value will be assigned to virtual key 0 (VK 0).
- Position the cursor in the *Unicode Mapping* field, and type a **Unicode value** for the highlighted key.



Note: To add a shifted state, [SHIFT] and/or [CTRL], press [TAB] to position the cursor in the checkbox next to 'SHIFT Pressed' and/or 'CTRL Pressed'. Press [SPACE] to select the shift state you want to assign.

Removing Unicode Values

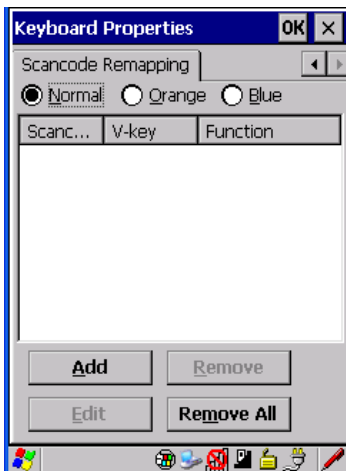
- In the *Unicode Mapping* tab, highlight the item you want to delete, and choose the **Remove** button.

6.5.2.7 Scancode Remapping

A scancode is a number that is associated with a physical key on a keyboard. Every key has a unique scancode that is mapped to a virtual key, a function or a macro. *Scancode Remapping* allows you to change the functionality of any key on the keyboard. A key can be remapped to send a virtual key (e.g. VK_F represents the 'F' key; VK_RETURN represents the [ENTER] key, etc.), perform a function (e.g. turn the scanner on, change volume/contrast, etc.) or run a macro.

There are three different tables of scancode mappings: the *Normal* table, the *Blue* table and the *Orange* table. The *Normal* table defines unmodified key presses; the *Blue* table defines

key presses that occur when the [FN/BLUE] modifier is on; the *Orange* table defines key presses that occur when the [FN/ORANGE] modifier is on. The default mappings of these scancodes can be overwritten for each of these three tables using the *Scancode Remapping* tab accessed from the *Keyboard Properties* dialog box.



The first column in the *Scancode Remapping* tab displays the scancodes in hexadecimal. If the scancode is remapped to a virtual key, that virtual key is displayed in the next column labelled 'V-Key'. A virtual key that is 'Shifted' or 'Unshifted' is displayed in the third column labelled 'Function'.

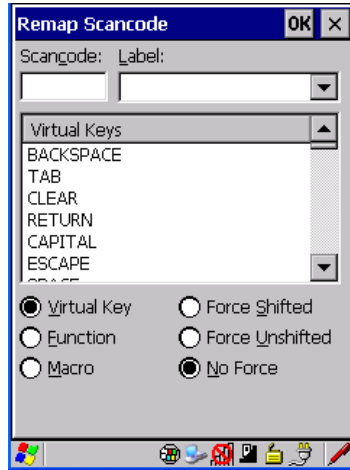
If the scancode is remapped to a function or a macro, the first and second columns remain blank while the third column contains the function name or macro key number (e.g., Macro 2).

Adding A Remap

To add a new remapping:

- Choose the **Add** button at the bottom of the dialog box.

The *Remap Scancode* dialog box is displayed.



- Type the scan code in hexadecimal in the field labelled *Scancode*



Note: The Label field displays the default function of the scancode you are remapping.

Virtual Key, Function And Macro

The radio buttons at the bottom of the dialog box allow you to define to what the scan code will be remapped: *Virtual Key*, *Function* or *Macro*.

When *Virtual Key* is selected, you can choose to force [SHIFT] to be *on* or *off* when the virtual key is sent. If *No Force* is selected, the shift state is dependent on whether the shift state is on or off at the time the virtual key is sent.

When *Function* is selected, a list of valid functions appears in the dialog box.

When *Macro* is selected, the macro keys available on your unit are listed in the dialog box.

- Choose **Virtual Key**, **Function** or **Macro**.
- Choose a function from the *Function* list in the dialog box, and tap on **OK**.

Editing A Scancode Remap

To edit a scancode:

- In the *Scancode Remapping* tab, tap the stylus on the remap you want to edit.
- Tap on the **Edit** button, and make the appropriate changes.
- Tap on **OK** to save your changes.

Removing A Remap

To delete a remap:

- In the *Scancode Remapping* tab, highlight the scancode you want to delete, and tap on the **Remove** button.
- Tap on **OK**.

6.5.2.8 Lock Sequence

The *Lock Sequence* tab allows you to lock the Warrington keyboard to prevent keys from being pressed accidentally when, for example, the unit is inserted in a holster.

- To lock the keyboard, tap in the checkbox next to *Enable key lock sequence*.
- Tap in the checkbox next to *Keyboard locked at startup*.
- In the *Key sequence* dropdown menu, choose the key sequence you will need to type to unlock the keyboard.



Note: It is useful to leave the 'Show popup message' enabled (default) so that anyone attempting to use the Warrington keyboard will see the key sequence they will need to enter to unlock the keyboard displayed on the screen.

A *locked keyboard* icon is displayed in the softkey bar when the keyboard is locked.

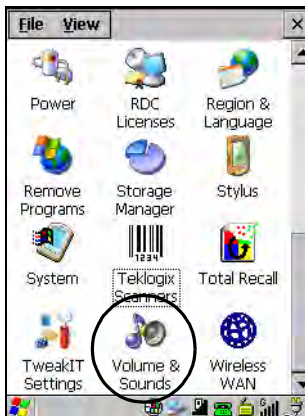


- Type the key sequence to unlock the keyboard.

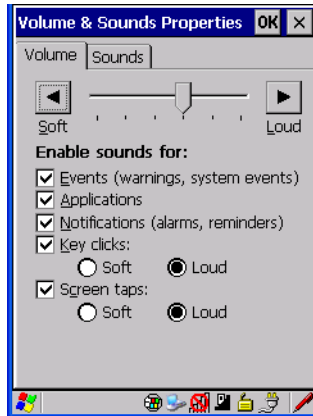
6.5.3 Volume And Sound Properties

- In the *Control Panel*, choose the **Volume & Sounds** icon.

Figure 6.5 Choosing The Volume Icon

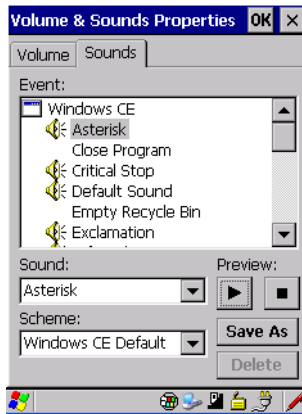


6.5.3.1 Volume Adjustments



- Slide the volume button to the left to lower the beeper volume or to the right to increase the beeper volume.
- Under the heading *Enable sounds for*, enable the conditions under which you want the Warrington to emit a beep.

6.5.3.2 Sound Adjustments



This dialogue box allows you to assign sounds to identify a particular actions. For example, you can choose the sound your hand-held will emit when you close a program and choose another sound for a failed scan, etc.

6.5.4 Power Management Properties

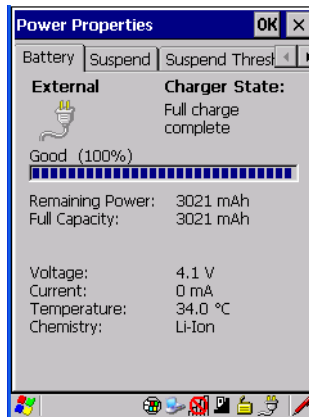
This icon displays a *Power Properties* dialog box that indicates the unit's battery capacity and allows you to manage battery use.

- In the *Control Panel*, choose the **Power** icon.



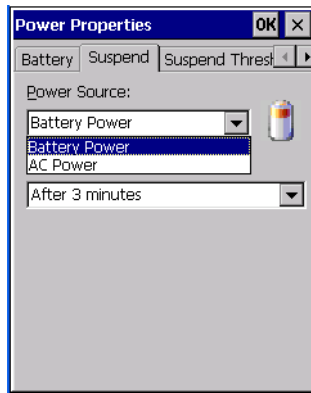
6.5.4.1 Battery Capacity

- In the *Power Properties* dialog box, open the **Battery** tab to view battery details.



6.5.4.2 Power Saving Suspend

- In the *Power Properties* dialog box, open the **Suspend** tab.



Power Source

This dialog box allows you to specify the suspend time for either *AC Power* or *Battery Power*.

Suspend Timeout

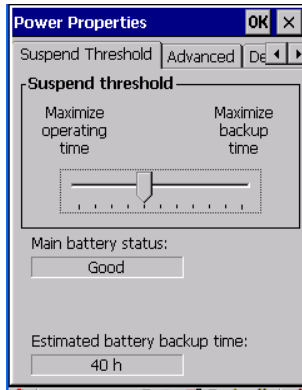


Important: *Psion Teklogix recommends setting the Suspend value to 10 minutes. To further reduce power consumption, carefully consider the duration of time that the display backlight is ‘on’ (see “Display Backlight” on page 84).*

When the Warrington is idle – not receiving any user input (a key touch, a scan, and so on) or system activity (serial data, an activity initiated by an application, and so on) – the hand-held uses the value assigned in the *Suspend Timeout* field to determine when the unit will go to sleep (appear to be off).

When the time in the *Suspend Timeout* field elapses without any activity, the unit enters *suspend* state. In suspend state, the Warrington CPU enters a sleep state, and the radio is shut off. The state of the device (RAM contents) is preserved. Pressing [ENTER] wakes the system from suspend state. When the Warrington is in suspend state, the network connection will not be broken immediately. If the connection is dropped, you must re-establish the network connection.

6.5.4.3 Suspend Threshold



The *Suspend Threshold* lets you to determine when the Warrington will shut down. If the slider is left at the default value, *Maximum Operating Time*, the hand-held will run until the battery is completely empty; the RAM is only backed up for a short period of time. If you choose *Maximum Backup Time*, the hand-held will shut off with more energy left in the battery so RAM can be backed up for a longer period of time.



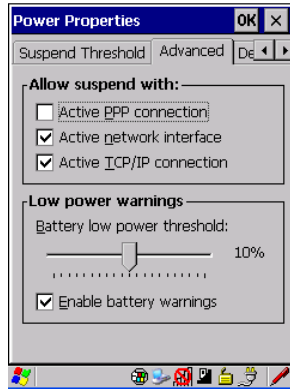
Important: *Selecting Maximum backup time will reserve approximately 20% of the battery capacity for memory backup. Once the battery is drained, the system RAM memory is lost and the unit must boot.*

In most real-time transaction environments this is not a problem (it only takes a few seconds to boot). Batch transaction environments, where data is not saved to a non-volatile memory (such as an SD FLASH card), may need to pay particular attention to this parameter. Psion Teklogix does not recommend the storage of any valuable data in system RAM.

The Warrington Windows CE 5.0 environment does not store any critical data in RAM (such as the registry or file system).

If the user's application does not save data to RAM, Psion Teklogix recommends keeping the Suspend Threshold setting as low as possible to maximize battery run time.

6.5.4.4 Advanced



Allow Suspend With:

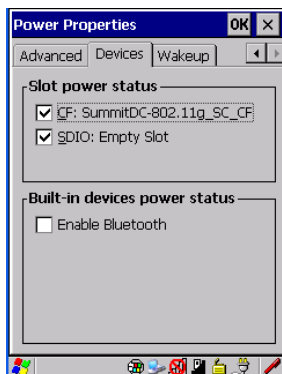
This tab allows you to specify whether or not your unit will enter Suspend state while it is operating with an active PPP connection, network interface or active TCP/IP connection.

Low Power Warnings

The sliding scale at the bottom of this tab allows you to specify the remaining battery capacity at which a warning message is displayed on the Warrington screen, from 0% to 20%.

6.5.4.5 Devices

This tab controls power to individual CF and SDIO slots, and built-in devices. Enable or disable the checkboxes as needed, then tap on **OK** to save your changes.

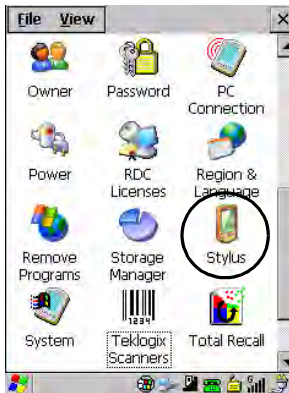


6.5.5 Stylus Properties



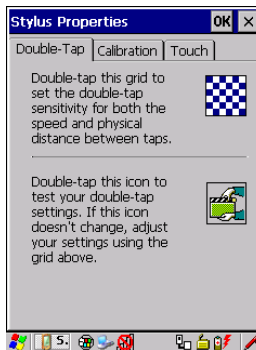
Note: Touchscreen calibration may not be enabled on your unit. If your screen appears to require recalibration, contact your supervisor.

- In the *Control Panel*, choose the **Stylus** icon.



6.5.5.1 Double-Tap

- In the *Double-Tap* tab, follow the directions to tailor the sensitivity of the stylus when you tap on the touchscreen.



6.5.5.2 Calibration

Touchscreens rarely require recalibration. However, if your touchscreen has never been calibrated or if you find that the stylus pointer is not accurate when you tap on an item, follow the directions below.

- Choose the **Calibration** tab, and then tap on the **Recalibrate** button.



- Follow the directions in the *Calibration* tab to recalibrate the screen.

6.5.5.3 Touch

This tab allows you to disable the touchscreen.

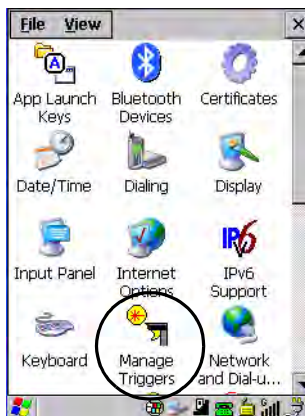
- Choose the **Touch** tab. Tap the checkbox next to *Disable the touch panel*.

6.5.6 Manage Triggers

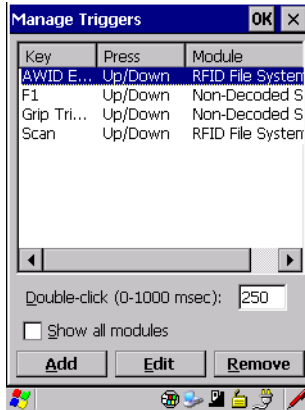
This option allows you to configure how bar code scanners and other devices such as RFID readers are triggered. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.

- In the *Control Panel*, choose the Manage **Triggers** icon.

Figure 6.6 Manage Triggers Icon



- In the *Manage Triggers* screen you'll see a list of trigger mappings.



6.5.6.1 Trigger Mappings

A trigger mapping is an association between a particular key on the keyboard and a driver or application, the module(s) – sometimes referred to as “trigger consumer(s)” – of the trigger source. Along with keyboard keys, trigger sources can also be grip triggers, external hardware triggers or software-based. When the specified key is pressed, the trigger consumer (for example, a decoded scanner) is sent a message.



Important: *It is not possible to have two or more identical mappings—for example [F1] cannot be mapped to the Non-Decoded Scanner twice—even if the trigger type is different.*

A keyboard key that is used as a trigger source will no longer generate key data or perform its normal function. For example, if the space button is used as a trigger source, it will not be able to send space characters to applications.

Double-Click

When a key is pressed and released, then pressed again within the configured time (between 0 to 1000 milliseconds), a double-click occurs. See also “Trigger-Press Type” on page 108.

Show All Modules

By default, the trigger mapping list only shows active mappings. Mappings for drivers or applications that are not currently active are not normally displayed. By checking this checkbox, all mappings, both active and inactive, are displayed.

Add

Tapping this button brings up the *Add Mapping* dialog (see “Add And Edit Trigger Mapping” on page 107), so that you can add new trigger mappings.

Edit

Tapping this button brings up the *Edit Mapping* dialog (see “Add And Edit Trigger Mapping” on page 107), so that you can edit existing trigger mappings.

Remove

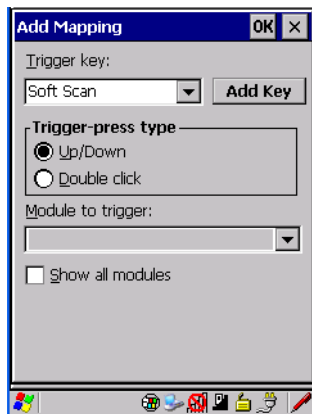
Tapping this button removes an existing mapping.

OK

The *OK* button in the top right of the *Manage Triggers* screen saves all changes made. If the cancel button *X* is tapped instead, or the [ESC] key is pressed, all changes made will be discarded.

6.5.6.2 Add And Edit Trigger Mapping

These dialogs allow the user to add and edit trigger mappings.



Trigger Key

This drop-down list allows you to specify the source of the trigger events, such as the *Grip Trigger*, *Left Scan*, etc., for the trigger module selected.



Note: It is possible to map the same source to different modules (trigger consumers) – for example, to both the Imager and Non-Decoded Scanner. If so, both devices/operations will occur simultaneously. This is not recommended in most cases, especially with devices such as Imagers or RFID Readers.

It is also possible to map different sources to the same module (trigger consumer).

Add Key

Only existing trigger sources are shown in the Source combo-box. To add a new source to this list, tap on the **Add Key** button. A dialog will pop up and allow you to select the keyboard key to use as a trigger source.



Trigger-Press Type

You can enable either an *Up/Down* or *Double Click* response to a trigger press. Normally, when a trigger (keyboard key, etc.) is pressed and released, a “trigger down” event is sent to the “owner”—that is, the application receiving the trigger press information—followed by a “trigger up”. If *Double Click* is chosen in this menu, when the trigger is pressed, released, and then pressed again, a “double-click” event will have occurred. If a mapping with the type *Up/Down* has also been configured for the same source, it will only receive the first set of trigger events.

Module Trigger

This identifies the driver or application receiving the trigger presses.

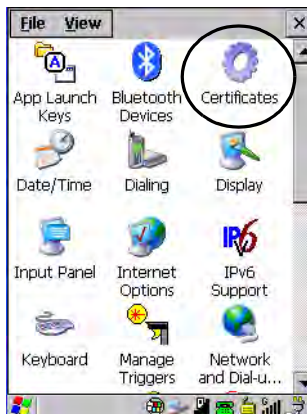
Show All Modules

By default, inactive owners are not shown. By checking this checkbox, all owners, both active and inactive, are displayed.

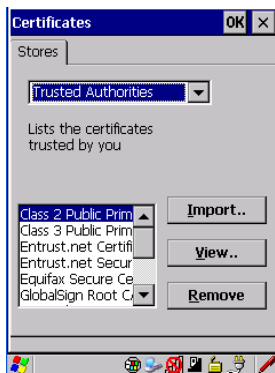
6.5.7 Certificate Assignment

- In the *Control Panel*, choose the **Certificate** icon.

Figure 6.7 Certificates Icon



This option is used in conjunction with 802.1x authentication to enhance Warrington security.



For a detailed description about Certificate setup for both the server and client-side devices (Warrington hand-helds), refer to the following website:

<http://www.microsoft.com/windowsserver2003/techno/overview/security.mspx>



Note: When importing certificates, the Warrington only recognizes .cer files.

6.6 Bluetooth Setup

Bluetooth is a global standard for wireless connectivity for digital devices and is intended for Personal Area Networks (PAN). The technology is based on a short-range radio link that operates in the ISM band at 2.4 GHz. When two *Bluetooth*-equipped devices come within a 10 meter range of each other, they can establish a connection. Because *Bluetooth* utilizes a radio-based link, it does not require a line-of-sight connection in order to communicate.

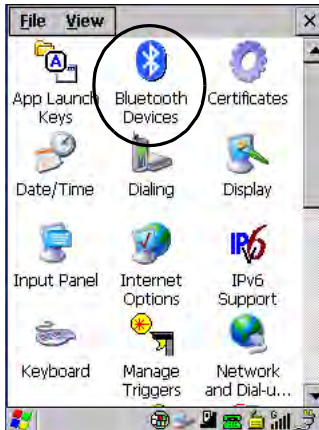


Note: The **Bluetooth** radio uses an internal antenna.

The *Bluetooth* radio is disabled by default. Before you begin the setup process:

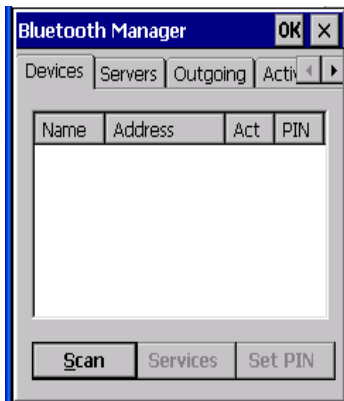
- In the *Control Panel*, tap on the **Power** icon.
 - Tap on the **Devices** tab, and tap in the checkbox next to **Enable Bluetooth**. Tap on **OK**.
- When the radio is enabled, a *Bluetooth* icon appears the taskbar at the bottom of the screen. It is ready for setup.
- In the *Control Panel*, choose the **Bluetooth** icon.

Figure 6.8 *Bluetooth* Icon



The **Bluetooth Manager** dialog box displays the other *Bluetooth* devices with which you can communicate.

6.6.1 The Devices Tab



If you intend to pair devices (a headset, for example), power on and bring the devices within 5 m (16.4 ft.) of the hand-held before proceeding with the discovery process described below.

6.6.1.1 Pairing A Device

To pair devices:

- Follow the manufacturer's instructions to place the device you want to pair in pairing mode
- Choose the *Devices* tab and **Scan** for devices in your area.
- When the scan is complete, highlight the device you want to pair with and either double-click or press the **Services** button.
- If a PIN dialog box appears, type your PIN and tap on **OK**.

After entering the device PIN number, the *Services* dialog appears with a list of services available on that device.

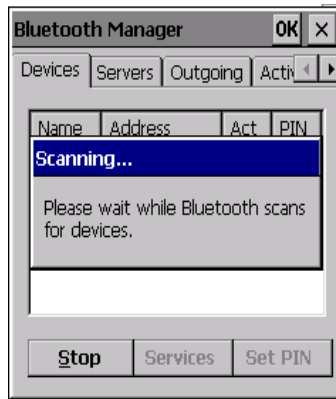
- To select a service, double-click on the service you want, or highlight the service and press the space bar.
- In the drop-down list of options available, choose **Active** to pair the device.

A COM/BSP port name will appear next to the service for this device. Your device is now paired.

Scan

- Click on the **Scan** button to list available devices.

Figure 6.9 Available *Bluetooth* Devices



Wait for the Warrington to complete its scan (approximately 20 seconds). When scanning starts, the *Scan* button will change to *Stop*—if necessary, you can tap on this button to stop the process. Once scanning is complete, all discovered devices will be displayed in the list box, with *Name*, *Address*, *Active* status, and *PIN* information.



*Note: During the scanning process, addresses are located first, followed by names. Only the names of devices that are within the **Bluetooth** radio coverage range will be retrieved.*

The *Active* column indicates whether any service is activated for that device. When a service is activated, the device is displayed in the list even when it is not detected during the scan.

The *PIN* column indicates whether you have a PIN (password) set for the device.

At this point you can either query for services or set the PIN for each device. Once you highlight a device in the list box, both the *Services* and *Set PIN* buttons become available.

Services

A discovered device may display several service profiles that it can use to communicate, and you will want to activate the type you need. Supported profiles that can be activated include: *DUN* (Dial-Up Networking service), *Printer* (serial service), *Headset service* and *LANPPP* (LANAccessUsingPPP service). *ASync* (ActiveSync) is another available profile.

- To start the service scan, highlight a device in the *Devices* tab list, and then click on the **Services** button or double-click on the device entry.



*Note: If the remote device is out of reach or turned off, it can take a considerable amount of time for the *Services* dialog box to appear—it may appear to be frozen.*

Once the device's service profiles are displayed in the *Services* list box:

- Highlight the service to be activated.
- Press [SPACE] or right-click to display the *Activation* menu.

The Activation menu contains four options: *Activate*, *Authenticate*, *Outgoing*, and *Encrypt*.

Once the service is successfully activated, the assigned port (if applicable) will appear in the *Port* column of the *Services* list box. You can choose to use *BSP* or *COM* as the port name. *BSP* is the latest Microsoft *Bluetooth* stack standard, but older applications assume serial ports are *COM*. When using *COM* as the port name, the *Bluetooth* manager will try to find and use a free port between *COM7* and *COM9*. When using *BSP* as the port name, *BSP2* to *BSP9* are available for use. The port is available as soon as it is activated.



*Note: The **CH** column shows the RFCOMM channel of the service if the service is RFCOMM-based. This information is not generally needed except for debugging purposes.*

To add a service to the *Outgoing* port, an active service must first be deactivated. Then you can choose the **Outgoing** option from the *Activation* menu (highlight a service, right-click or press the [SPACE] bar to display the Activation menu).

The *Authentication* and *Encryption* options can be changed only before activation. To change these after activation, deactivate the service first, then change the options.

Once a service is activated, all the information regarding the service, including the RFCOMM channel number, is saved in the registry. (Some remote devices may change their RFCOMM channel numbers when they reboot, so your saved setting may not work when the remote device is rebooted. In that case, you must deactivate the service and reactivate it to detect the current RFCOMM channel.)

Set PIN

PINs can be set for each device by pressing the **Set PIN** button in the *Devices* tab, or you can skip this step and try to connect to the device first.



Important: *The remote device must have authentication enabled, otherwise the PIN authentication will fail.*

- Highlight a device, click on the **Set Pin** button, and type the PIN.

You will receive a message, either that the PIN has been successfully validated or that it has been rejected.

If the PIN has been validated, an asterisk (*) appears in the PIN column in the *Devices* list box, indicating that this device has a PIN set. Once a PIN is entered, it is saved in the registry.

To remove the PIN:

- Choose **Set PIN**, and press [ENTER].

If the Warrington attempts to connect to a remote device that has Authentication enabled and does not have a required PIN set, an *Authentication Request* dialog box appears.

- Enter the PIN, and tap on **OK** to connect the devices.

6.6.2 The Servers Tab



The *Bluetooth* connection is initiated from your Warrington to the remote device. Therefore the Warrington is called the ‘client’ and the remote is called the ‘server’. The *Servers* tab displays the server profiles that can be activated in your hand-held. There is currently one server profile available: *Serial*.

- Tap on the checkbox to activate the server, and it will display the associated port name beside the server name.

Once you activate a server profile, it is recommended that the Warrington be rebooted before you try to bond from a server.



Note: You do not need to reboot if you are deactivating a server.

6.6.3 Outgoing Tab



Outgoing Port acts as a serial port that can be used to connect to a list of *Bluetooth* devices (one at a time), but you have the freedom to switch on-the-fly.

The *Outgoing Port* checkbox allows you to create the Outgoing port. When the port is created, the *Outgoing* tab lists the port name.

The *Outgoing* list dialog box displays a list of services marked as ‘Outgoing’. The * column indicates the currently selected service. You can tap on **Unselect** to reset the current selection, or you can tap on **Select** to make a selection. The **Remove** button deletes the service from the outgoing list.

The *Prompt* menu determines the behaviour of the pop-up *Selection* menu. Choosing **Everytime** causes the *Selection* menu to be displayed each time an outgoing port is created. If you choose *Once*, the menu is displayed only when a partner service is not selected.

To display the *Selection* menu at any time:

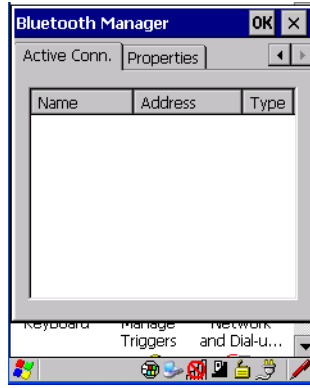
- Press [CTRL] [ALT] [F1], and switch the partner *Bluetooth* device.

If a connection to a partner device already exists, the connection is dropped and another connection to the newly selected device is created instantly without disrupting the application that has opened the outgoing port.



Note: To add a service to the Outgoing port, an active service must first be deactivated. Then you can choose the ‘Outgoing’ option from the Activation menu (highlight a service, right-click or press the [SPACE] bar to display the Activation menu).

6.6.4 Active Conn. Tab



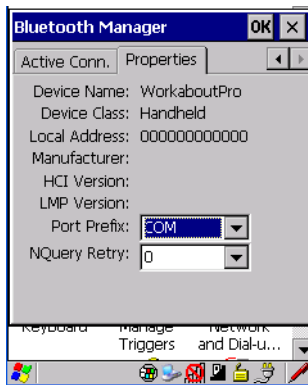
The *Active Conn.* tab lists the *Name*, *Address*, and *Type* of the currently active connections. The table is periodically updated, but it can take a few seconds before it reflects the actual list of connections. The *Type* column of the table shows ‘ACL’ or ‘SCO’. The Connection list table shows the connections for scanning as well as the service connections.



Note: You can change the device-name and description of your radio by clicking on the **System** icon in Control Panel, which will open the System Properties dialog box. Click on the **Device Name** tab to access the menu and change your settings. Then click on **OK**.

Although the name will have changed in the Properties menu in **Bluetooth Controls**, the radio only reads it on boot-up. For the changes to take effect, you must reset the Warrington (for reset instructions, see “Resetting The Warrington” on page 33).

6.6.5 The Properties Tab



The *Properties* tab displays information about your Warrington, and provides some port options.

The *Device Name* field shows the device name of your Warrington. This name can be changed (see the *Note* on the previous page for details).

Device Class shows the Class of Device (e.g. desktop, hand-held), which is always set to *Handheld*.

Local Bluetooth Address shows the address of your Warrington radio.

Port Prefix is used to set the port name to either *BSP* or *COM*. When the name is set to *BSP*, BSP2 to BSP9 are available for activated services (including the server). When *COM* is chosen, COM7 to COM9 are available.

NQuery Retry (Name Query Retry) governs the number of times the hand-held will attempt to query the names of other *Bluetooth* devices if the first attempt fails. (When the Warrington scans for other devices, it sometimes fails to scan names.)



Note: Keep in mind that setting this parameter to a higher value will lengthen the scan time.

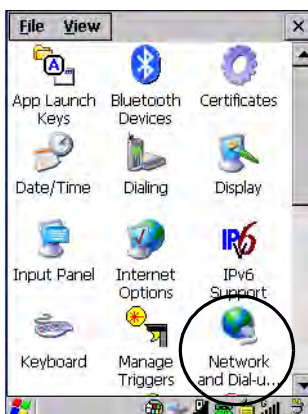
6.6.6 The Search For Tab

The *Search For* tab allows you to specify the services for which the *Bluetooth* radio will scan.

6.6.7 The *Bluetooth* GPRS WAN Connection

The following steps describe how to set up an internet data connection using a GSM cellular telephone with *Bluetooth*. The Warrington communicates via *Bluetooth* to the cell phone, which then accesses a WAN (Wide Area Network) and transfers data using GPRS.

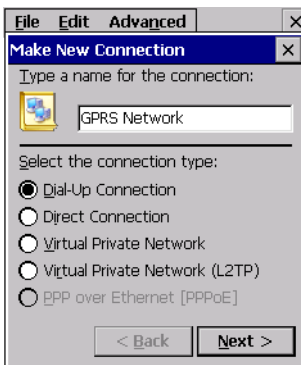
1. To set up the internet parameters, choose the **Network And Dial-up Connections** icon from the *Control Panel*



2. Choose the **Make New Connection** icon.

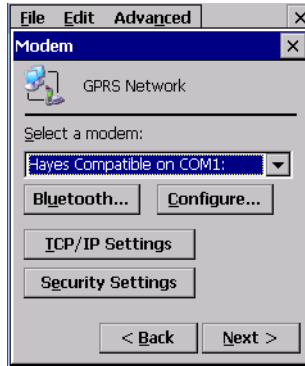


3. In the *Make New Connection* dialog box, choose **Dial-Up Connection**. Enter a name for your GPRS network connection.



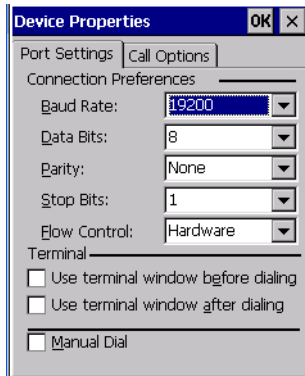
Preliminary Draft

4. Choose the **Next** button to display the *Modem* dialog box.

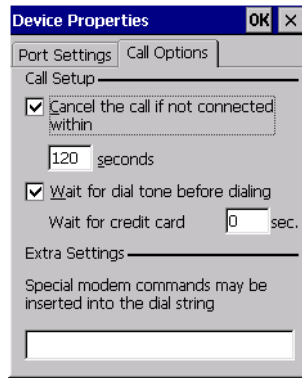


5. In the drop-down menu labelled *Select a modem*, choose the name of the modem with which you want to connect, and then choose the **Configure** button to display the *Device Properties* dialog box.

The Warrington communicates via *Bluetooth* to your *Bluetooth*-equipped cellular telephone and retrieves the parameters for the *Device Properties* dialog box. The Warrington then disconnects.



- Under the *Call Options* tab, turn off **Cancel the call if not connected within**, and press [ENTER] to save your changes.



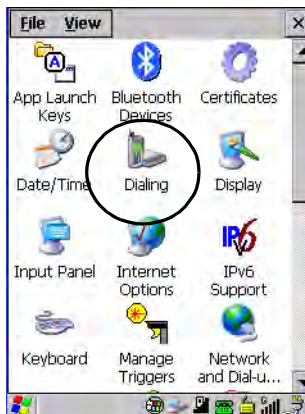
- In the *Modem* dialog box, choose the **Next** button to display the *Phone Number* dialog box.



The phone number you enter is network carrier dependent. Once you've specified all the necessary information, choose the **Finish** button.

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8. In the *Control Panel*, choose the **Dialing** icon.



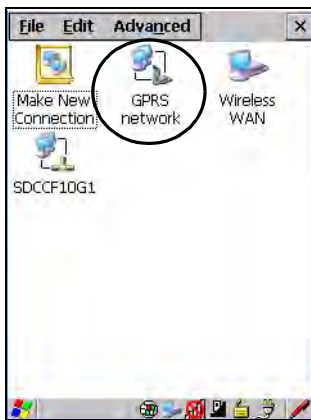
9. The values in the *Dialing Properties* dialog box need to be edited according to your network carrier specifications.



Once you've edited this dialog box to reflect your network carrier requirements, press [ENTER] to save your changes.

10. At this point, you'll need to return to the *Control Panel*, and choose the **Network and Dial-up Connections** icon.

11. In the network connection window, the new network configuration, in this case *GPRS Network* is displayed. Tap on the **new** icon.



When you tap on your new connection, an onscreen message indicates the status of your connection: connected, disconnected, error messages, and so on.

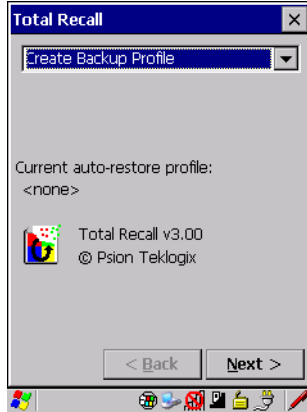
6.7 Total Recall

Total Recall is a Psion Teklogix utility developed to maintain applications and settings during a cold boot. This utility is based on a backup and restore concept.

- In the *Control Panel*, choose the **Total Recall** icon



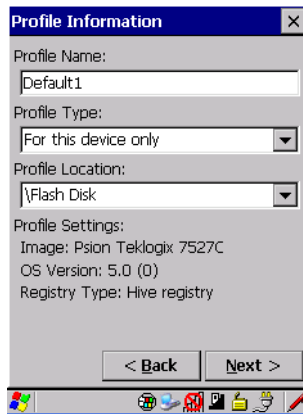
6.7.1 Creating A Backup Profile



In the drop-down menu, you can choose from four options: *Create Backup Profile*, *View Selected Profile*, *Restore Selected Profile* and *Delete Selected Profile*. Keep in mind however that until a profile is created, the only available option is *Create Backup Profile*.

- Choose the **Next** button to begin the process.

Profile Information



This dialog box lists the possible storage destinations for the profile file.

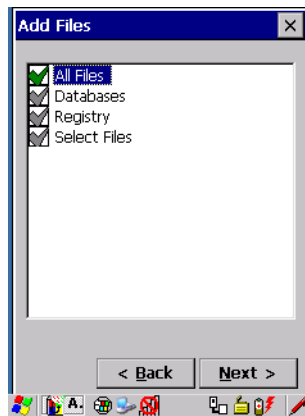
1. To begin, type a name for the profile in the field labelled *Profile Name*.
2. Choose the *Profile Type* you want to create:
For this device only—creates a backup that is manually restored by the operator.

AutoRestore for this device only—creates a profile that automatically restores itself following a restart.

AutoRestore for this and other devices—creates a profile that automatically restores after resuming from a restart, but it will not contain the touchscreen calibration coordinates or the Wireless radio settings.

3. Finally, choose a *Profile Location* —The location for the profile is either \Flash Disk or \SD-MMC Card.
4. Tap on the **Next** button to display the next dialog box *Add Files*.

Add Files

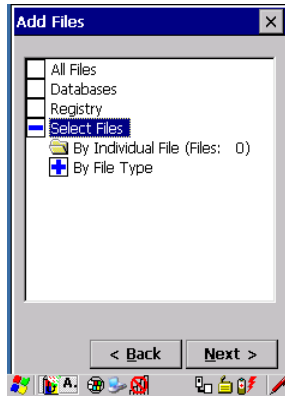


By default, *All Files* is selected so that all installed or copied files, database entries, and the Registry will be saved. You can, however, limit the backup to databases, and/or the registry only. By tapping the checkbox next to these items, you can add or remove a check mark to enable or disable the option.

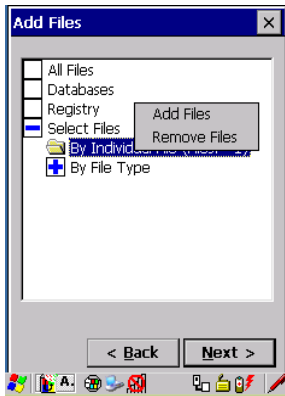
The *Select Files* option allows you to select predefined file types.

- Remove the check mark next to *All Files*. You'll notice the checkbox next to *Select Files* changes , indicating that additional options are available.

- Choose this icon  next to *Select Files* to view your options.



Choosing *By Individual File* displays a pop-up menu where you can tailor the list of files you want to back up.



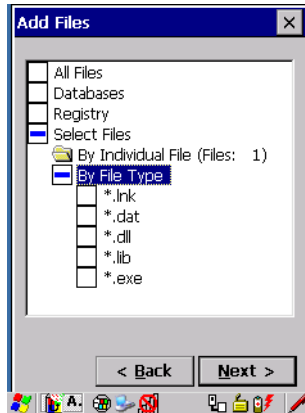
To add a file to your backup list:

- Choose **Add Files**. Browse to and choose the files you want to add to your list.

To remove a file from your backup list:

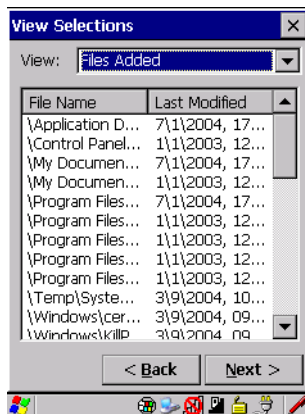
- Choose **Remove Files**—a dialog box is displayed listing the files that will be backed up.
- Highlight the item you want to remove from the list, and tap on the **Remove** button.

Choosing *By File Type* allows you to select the file types that you want backed up.



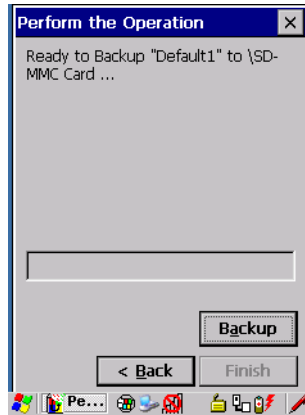
View Selections

Depending on what you have selected for inclusion in your profile, you can view a list of the selected files, databases and/or registry.



- Choose the **Next** button to perform the operation.

Perform The Operation



- Choose the **Backup** button to start the process, and create a profile.

6.7.2 Restoring A Profile

To manually restore a profile:

- Choose **Restore Selected Profile** from the drop-down menu, and choose the **Profile Name** displayed in the drop-down menu.



Note: You can also manually restore an auto restore profile located in flash or a storage device.

6.8 The Storage Manager

The *Storage Manager* allows the user to view information about the microSD card present in the Warrington.

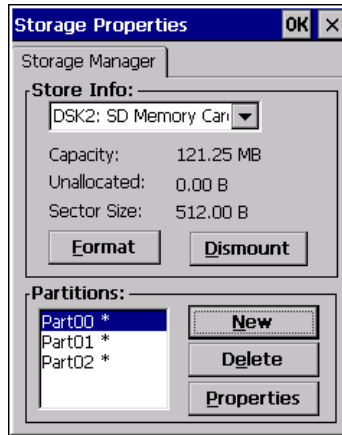
6.8.1 Formatting A Memory Card

Formatting a memory card bulk-erases it. Once a card is erased, partitions may be created in it, similarly to those on a hard drive. Memory-card devices are normally ‘mounted’ (made available to the system) automatically when they are inserted. They must be dismounted before they can be formatted.

To format an entire memory card:

1. Choose **Start> Settings>Control Panel**.

2. In *Control Panel*, double-click on the **Storage Manager** icon. The *Storage Manager* menu opens:



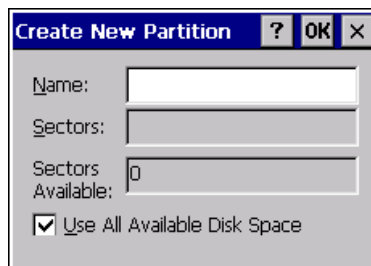
3. Choose the memory card from the drop-down list.
4. Press the **Dismount** button to dismount the memory card. All partitions on the card will be dismounted.
5. Press the **Format** button to format the memory card.
All partitions and information on the card will be erased during the formatting process.

6.8.2 Creating Partitions

Once the card is formatted, new partitions can be created in it. The default is to create one partition that occupies the whole card, but a card can be divided into more than one partition if desired. Each partition appears as a separate folder in Windows Explorer.

To create new partitions:

1. Tap the **New** button next to the *Partitions* list box. The Create New Partition dialog box appears:



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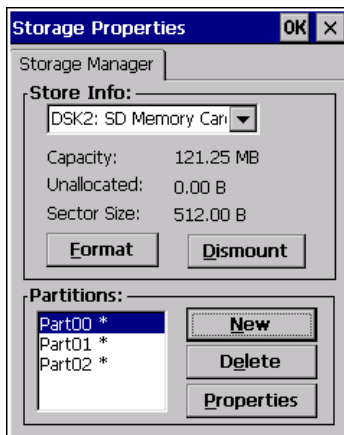
Chapter 6: Configuration Creating Partitions

2. Type a name for the partition.
3. If more than one partition is desired, uncheck the *Use All Available Disk Space* checkbox, then specify the desired number of sectors to be used by the partition:



Note: The sector size of the card is given on the left-hand side of the Storage Properties dialog.

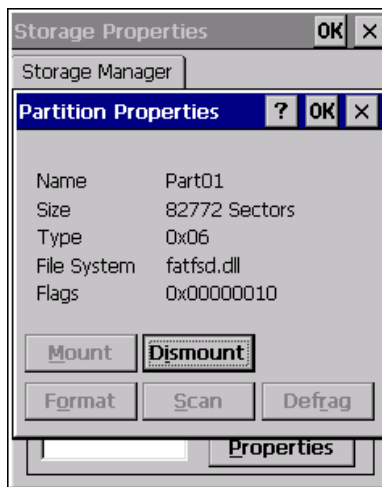
4. Tap **OK**. The new partition appears in the *Partitions* list:



The new partition is automatically mounted. This is indicated by an asterisk (*) next to its name in the partition list. Any unallocated space on the card is indicated at the left, and additional partitions can be created in it.

6.8.3 Partition Management

Partitions can be individually dismounted, mounted, deleted, or formatted as well. These and additional tasks are available from the *Partition Properties* dialog:



To dismount a partition:

- Choose the desired partition.
- Tap the **Properties** button. The *Partition Properties* dialog appears.
- Tap the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.

To delete a partition:

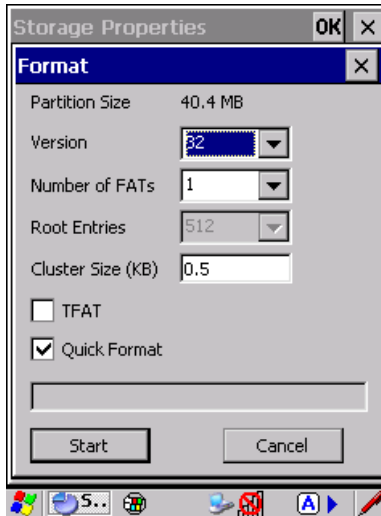
- Select the desired partition.
- Tap the **Delete** button. A warning dialog appears.
- Tap the **OK** button. The partition is deleted.

To format a partition:

1. Choose the desired partition.
2. Tap the **Properties** button. The *Partition Properties* dialog appears.
3. Tap the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.

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4. Tap the **Format** button. The *Format* dialog appears:



5. Choose your format options. These options include:
 - Version of file system (FAT-16, for devices holding up to 4 GB; or FAT-32, for devices containing up to 32 GB).
 - Number of FATs (File-Allocation Tables).
 - Number of entries allowed in the root directory.
 - Cluster size (.5 KB to 64 KB).

There are also two checkboxes, which govern:

- Whether to use the transaction-safe FAT file system (TFAT). This file system keeps multiple copies of the file-allocation table, changing one while maintaining another as a backup.
- Whether to perform a quick format. Quick formatting removes all reference to data in the partition without erasing the actual partition. The partition will be treated as empty, and new data will overwrite it.

6. Tap **Start**. The partition is formatted.

To mount a partition:

- Choose the desired partition.
- Tap the **Properties** button. The *Partition Properties* dialog appears.
- Tap the **Mount** button. The partition is mounted. The asterisk appears next to its name in the partitions list.

The Partition Properties dialog has buttons for additional functions. Partitions can be defragmented, and their file structure can be scanned.

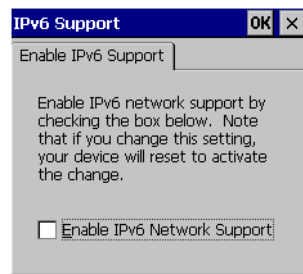
6.9 IPv6 Support

The *IPv6 Support* icon in the *Control Panel* allows you to activate IPv6 network support on your unit if your network setup requires this. This internet protocol specification (version 6) supports 128-bit IP addresses, replacing version 4.

Figure 6.10 IPv6 Support Icon



- Choose the **IPv6 Support** icon to display the associated dialog box.



- Choose the checkbox next to *Enable IPv6 Network Support* to enable this internet protocol.

6.10 Scanner Settings

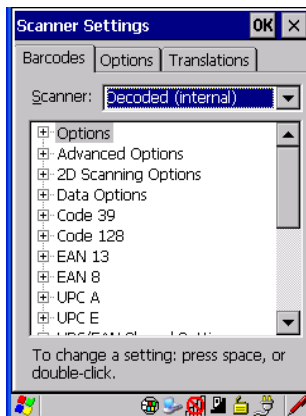
The *Teklogix Scanners* icon in the *Control Panel* provides dialog boxes in which you can tailor bar code options and choose the bar codes your scanner will recognize. The parameters are preset with the default settings of the decoded scanner installed in the unit.

Figure 6.11 Teklogix Scanners Icon



For a listing of available scanners and their specifications, please refer to Chapter 8: “Specifications”.

6.10.1 Bar Codes



6.10.1.1 Scanner

The drop-down menu to the right of the *Scanner* option allows you to choose from one of the following scanner types used with your hand-held: *Decoded* (internal), *Decoded* (HHP), *Decoded* (ISCP), and *Imager*.

The symbologies listed change to reflect the scanner you choose and the bar codes it supports.



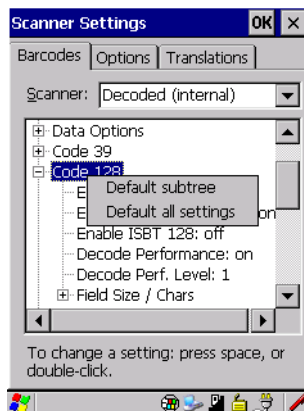
Important: *To improve the decode speed and performance, enable only those codes that are required by the application.*

Keep in mind that some bar code types are only available when an internal imaging scanner is installed. All internal scanners can be configured using the *Barcode* dialog boxes.

6.10.1.2 Restoring Default Settings

If you want to restore the factory defaults after making changes, the defaults can be applied to a selected parameter, sub-tree of parameters or all scanner parameters.

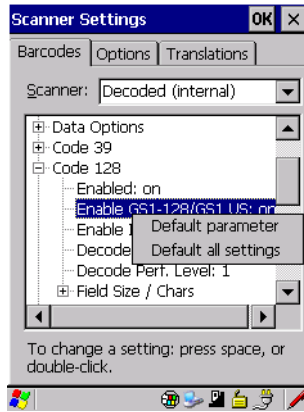
- Press and hold the stylus on a symbology (e.g., Code 128) to display a pop up a menu.



- Choose **Default subtree** to reset only the parameters in the symbology you selected, or choose **Default all settings** to reset all scanner parameters to default settings.

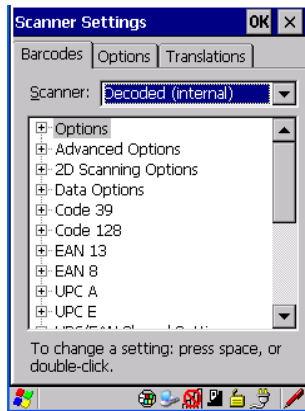
To reset a single parameter to its default setting:

- Press and hold the stylus on the parameter you want to reset.



- Choose **Default parameter** to reset the parameter to the default setting.

6.10.2 Decoded (Internal) Scanners



- Tap on the **Scanner** drop-down menu, and choose **Decoded (internal)**.

6.10.2.1 Options



Note: Some options are available only for specific scanners. Refer to the option names in this section for scanner model identification.

Dot Time (msec)

The value selected for “Dot Time (msec)” determines (in milliseconds) how long the targeting dot remains on before the scanner switches to a normal scan sweep. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of *0 msec*, *200 msec* or *400 msec*. A value of **0** (zero) disables the target dot.

Aim Duration

This parameter determines the total time the aiming pattern appears before the scanner laser begins sweeping. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from *0* to *30* (*0* to *3* sec.). A value of **0** (zero) disables the aiming-dot.

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed. Double-tapping on this parameter displays a dialog box in which you can enter a value between *5* and *99*, each number representing 0.1 seconds.

6.10.2.2 Decoded (Internal) - Advanced Options

Continuous Scan Mode

Setting this parameter to **on** keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Low Power Timeout

To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned—a successful decode restores normal blinking.

This is only used if the unit’s Trigger Mode has been changed to Continuous On. If the unit is used in a fixed mount this parameter might be used, but not if the unit is used as a hand-held.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec.*, *1 min.*, *2 min.*, or *3 min.*

Parameter Scanning

Setting this parameter to **on** enables decoding of parameter bar codes.

Linear Security Level

This parameter allows you to select the security level appropriate for your bar code quality. There are four levels of decode security for linear code types (e.g., Code 39, Interleaved 2 of 5). Higher security levels should be selected for decreasing levels of bar code quality. As security levels increase, the scanner's decode speed decreases.

Double-tapping on this parameter displays a dialog box in which you can enter a value from **1** to **4**.

Linear security level 1 specifies that the following code types must be successfully read twice before being decoded:

Code Type	Length
Codabar	All
MSI Plessey	4 or less
D 5 of 5	8 or less
I 2 of 5	8 or less

Linear security level 2 specifies that all types of codes must be successfully read twice before being decoded.

Linear security level 3 specifies that code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

Code Type	Length
MSI Plessey	4 or less
D 2 of 5	8 or less
I 2 of 5	8 or less

Linear security level 4 requires that all code types be successfully read three times before being decoded.

Bi-Direction Redundancy



Note: This parameter is only valid if a "Linear Security Level" is enabled.

When this parameter is enabled, a bar code must be successfully scanned in both directions (forward and reverse) before being decoded.

6.10.2.3 Decoded (Internal) - 2D Scanning Options

Scanning Mode

When you double-tap on this parameter, a dialog box is displayed in which you can choose one of the following scanning modes: *Smart Raster*, *Always Raster*, *Programmable Raster*, *Slab Pattern*, *Cyclone Pattern*, or *Semi-Omni Pattern*.

Raster Height And Raster Expand Rate

These parameters determine the laser pattern's height and rate of expansion.



Note: These parameters are only used when either Programmable Raster or Always Raster is assigned to the "2D Scanning Mode" parameter. "2D Raster Height" and "2D Raster Expand Rate" are intended for very specific applications and are usually not required for normal scanning purposes.

Double-tapping on this parameter displays a dialog box in which you can enter a value from 1 to 15.

6.10.2.4 Decoded (Internal) Data Options

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a transmit code: *None*, *AIM*, or *Symbol*.

Scan Data Format

This parameter allows you to change the scan data transmission format. Double-tapping on **Scan Data Format** displays the following options from which you can choose a data format: *data (as-is)*, *data [S1]*, *data [S2]*, *data [S1][S2]*, *[P] data*, *[P] data [S1]*, *[P] data [S2]*, and *[P] data [S1][S2]*.

Prefix [P], Suffix [S1] And Suffix [S2]

A prefix and/or one or two suffixes may be appended to scan data for use in data editing.

When you double-tap on these parameters, a dialog box is displayed in which you can enter a value from 0 to 255.

Delete Char Set ECIs

Setting this parameter to **on** enables the scanner to delete any escape sequences representing Character Set ECIs—Extended Channel Interpretations (also known as GLIs) – from its buffer before transmission.

When this parameter is enabled, the scanner transmits data from PDF417 and MicroPDF417 bar codes containing Character Set ECIs, even when the ECI Protocol is disabled.

ECI Decoder

Setting this parameter to **on** enables the scanner to interpret any Extended Channel Interpretations (ECIs) supported by the scanner. This parameter has no effect on symbols that were not encoded using ECIs.

If this parameter is set to **OFF** and a symbol that was encoded using an ECI escape is scanned, the scanner transmits the ECI escape followed by the data that was not interpreted.

6.10.2.5 Code 39

Enabled

Setting this parameter to **on** enables “Code 39”.

Enable Trioptic Code 39



Note: “Trioptic Code 39” and “Full ASCII” should not be enabled simultaneously. The scanner does not automatically discriminate between these two symbologies.

Trioptic Code 39 symbols always contain six characters. Setting this parameter to **on** allows this type of symbology to be recognized.

Convert To Code 32



Note: “Code 39” must be enabled in order for this parameter to function.

Setting this parameter to **on** allows the scanner to convert the bar code from “Code 39” to “Code 32”.

Code 32 Prefix



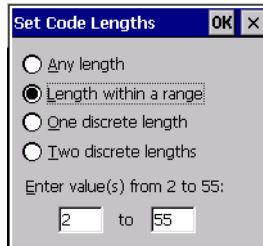
Note: “Convert to Code 32” must be enabled in order for this parameter to function.

When this parameter is enabled, the prefix character “A” is added to all “Code 32” bar codes.

Set Length L1 And Set Length L2

Lengths for “Code 39” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be decoded by your scanner



Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **1** to **55**.

Check Digit Verification

When this parameter is enabled, the integrity of a “Code 39” symbol is checked to ensure that it complies with specified algorithms.



Note: Only those “Code 39” symbols that include a Mod 43 check digit are decoded when this parameter is enabled.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must to enabled.

Full ASCII

If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Decode Performance

If this parameter is enabled, one of three decode levels can be chosen in the *Decode Performance Level* parameter.

Decode Perf. Level

This parameter provides three levels of decode performance or “aggressiveness” for Code 39 symbols. Increasing the performance level reduces the amount of required bar code orientation—this is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between **1** and **3**.

Field Size/Chars

Field Size

The field size is the length of the field after the first character is stripped and the prefix and suffix characters are added. If the field size is non-zero, only bar codes of that length are passed through.

Prefix Char

This character, if non-zero, is added before a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Suffix Char

This character, if non-zero, is added after a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Strip Leading

This parameter determines the number of characters that will be removed from the beginning of the bar code before the prefix character is added.



*Note: For Code 39 bar codes, the “AIAG Strip” is performed **before** the “Strip Leading”.*

Strip Trailing

The value entered in this parameter determines the number of characters that will be removed from the end of the bar code before the suffix character is added.

6.10.2.6 Code 128

Enabled

Set this parameter to **on** to enable “Code 128”.

Enable GS1-128/GS1 US

Previously UPC/EAN and UCC, these types of bar codes include group separators and start codes.

Enable ISBT 128

To successfully scan this variation, “Enable ISBT 128” must be set to **on**.

Decode Performance

If this parameter is set to on, one of three decode levels assigned to the *Decode Performance Level* parameter can be selected.

Decode Perf. Level

This parameter provides three levels of decode performance or “aggressiveness” for Code 128 symbols. Increasing the performance level reduces the amount of required bar code orientation—this is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between **1** and **3**.

Field Size/Chars

Refer to page 142 for details.

6.10.2.7 EAN 13

Enabled

Set this parameter to **on** to enable “EAN 13”.

Prefix/Suffix

Prefix Char

This character, if non-zero, is added before a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Suffix Char

This character, if non-zero, is added after a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Strip Leading

This parameter determines the number of characters that will be removed from the beginning of the bar code before the prefix character is added.



Note: The appended character is treated as any other keyboard character. For example, if [BKSP] is pressed, the usual action for that key is performed.

Strip Trailing

The value entered in this parameter determines the number of characters that will be removed from the end of the bar code before the suffix character is added.

6.10.2.8 EAN 8

Enabled

Set this parameter to **on** to enable “EAN 8”.

EAN-8 Zero Extend

When this parameter is enabled, five leading zeros are added to decoded EAN-8 symbols, making them compatible in format to EAN-13 symbols. Disabling this parameter returns EAN-8 symbols to their normal format.

Prefix/Suffix

See “Prefix/Suffix” on page 143.

6.10.2.9 UPC A

Enabled

Set this parameter to *on* to enable “UPC A”.

UPC-A, Check Digit

If you enable this parameter, the check digit is included with the decoded bar code data.

UPC-A, Preamble

When you double-tap on this parameter, a dialog box is displayed where you can choose one of three options for lead-in characters for UPC-A symbols transmitted to the host device:

System Char—system character transmitted with the data,

Country Code and System Char—both the country code (“0” for USA) and system character are transmitted with the data, or

None—no preamble is transmitted. The lead-in characters are considered part of the symbol.

Prefix/Suffix

See “Prefix/Suffix” on page 143.

6.10.2.10 UPC E

Enabled UPC-E

Set this parameter to **on** to allow “UPC E” bar code scans.

Enabled UPC-E1

Set this parameter to **on** to allow “UPC-E1” (zero suppressed) bar code scans.

UPC-E And UPC-E1 Check Digit

If you enable one or both of these parameters, a check digit is included with the decoded bar code data.

UPC-E And UPC-E1 Preamble

When you double-tap on one of these parameters, a dialog box is displayed where you can choose one of three options for lead-in characters for UPC-E and UPC-E1 symbols transmitted to the host device:

System Char—system character transmitted with the data,

Country code and System Char—both the country code (“0” for USA) and system character are transmitted with the data, or

None—no preamble is transmitted. The lead-in characters are considered part of the symbol.

Conv. UPC-E To UPC-A

This parameter converts UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Conv. UPC-E1 To UPC-A

This parameter converts UPC-E1 (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Prefix/Suffix

Refer to “Prefix/Suffix” on page 143.

6.10.2.11 UPC/EAN Shared Settings

The parameters you set here are shared across all available UPC and EAN bar codes.

Enable Bookland EAN

Setting this parameter to **on** allows your scanner to recognize Bookland EAN bar codes.

Supplementals

Supplementals are additionally appended characters (2 or 5).

Double-tapping this parameter displays a list of options. If *Ignore* is chosen, UPC/EAN is decoded and the supplemental characters are ignored. If *Decode* is chosen, UPC/EAN symbols are decoded with supplementals. *Autodiscriminate* works in conjunction with the Supp. Redundancy parameter.

Supp. Redundancy

With “Autodiscriminate” selected in the *Supplementals* parameter, *Supp. Redundancy* adjusts the number of times a symbol without supplementals is decoded before transmission.

When you double-tap on this parameter, a dialog is displayed in which you can enter a value between **2** and **20**. A value of 5 or above is recommended when *Autodiscriminate* is selected and you are decoding a mix of UPC/EAN symbols with and without supplementals.

Security Level

This parameter controls the tolerance for decoding edge-to-edge UPC/EAN bar codes. Double-tapping on this parameter displays a dialog box in which you can choose a level from **0** to **3**. Lower values have a lower tolerance for misreads, but they also increase the time it takes to decode the bar code.

Linear Decode

Linear Decode applies to code types containing two adjacent blocks (e.g., UPC-A, EAN-8, EAN-13). When enabled, a bar code is transmitted only when both the left and right blocks

are successfully decoded within one laser scan. This option should be enabled when bar codes are in proximity to each other.

2D UPC Half Block Stitching

Setting this parameter to **on** enables “UPC Half Block Stitching” for the omnidirectional scanner engine only.

6.10.2.12 Code 93

Enabled

Set this parameter to **on** to enable “Code 93”, or **OFF** to disable it.

Set Length L1 And Set Length L2

Lengths for “Code 93” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **4** to **55**.

Field Size/Chars

Refer to page 142 for details.

6.10.2.13 Codabar

Enabled

Set this parameter to **on** to enable “Codabar”.

Set Length L1 And Set Length L2

Lengths for “Codabar” can be set for *Any length*, *Length within a range*, *One discrete length*, or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **5** to **55**.

CLSI Editing

When enabled, this parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol.



Note: Symbol length does not include start and stop characters.

NOTIS Editing

When enabled, this parameter strips the start and stop characters from decoded Codabar symbol.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.2.14 MSI Plessey

Enabled

Set this parameter to **on** to enable “MSI Plessey”.

Set Length L1 And Set Length L2

Lengths for “MSI Plessey” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **6** to **55**.

Check Digits

Double-tapping on this parameter displays a dialog box in which you can choose *One* or *Two* check digit(s).

If this parameter is set to *One*, it is assumed that the last digit is a check digit. If “Check Digits” is set to *Two*, it is assumed that the last two digits are check digits.



*Note: If **Two check digits** is selected, an MSI Plessey “Check Digit Algorithm: must also be selected. See below for details.*

Transmit Check Digit

If this parameter is enabled, the check digit is included with the bar code data.

Check Digit Algorithm

When the *Two MSI Plessey* check digits option is selected, an additional verification is required to ensure integrity. Double-tapping on this parameter displays a dialog box in which you can choose the algorithm to be used: *MOD 10/MOD 11* or *MOD 10/MOD 10*.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.2.15 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable “Interleaved 2 of 5”.

Set Length L1 And Set Length L2

Lengths for “Interleaved 2 of 5” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **4** to **14**.

Check Digit Verification

When enabled, this parameter checks the integrity of an I 2 of 5 symbol to ensure it complies with a specified algorithm—either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit

If this parameter is enabled, the check digit is included with the bar code data.

Convert To EAN 13

If this parameter is enabled, the I 2 of 5 bar code is converted to EAN 13.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.2.16 Discrete 2 of 5

Enabled

Set this parameter to **on** to enable “Discrete 2 of 5”.

Set Length L1 And Set Length L2

Lengths for “Discrete 2 of 5” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **1** to **12**.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.2.17 RSS Code

Enable

Setting this parameter to **on** enables “2D RSS Code” scanning capability.

Enable RSS-14 (Reduced Space Symbology)

RSS-14 code can be either purely linear or split in half with one half stacked on top of the other half. Stacking the code reduces the bar code length, and providing the nominal height of the code is maintained, it can be omni-directionally scanned.

Enable RSS Limited

“RSS-Limited” is restricted, in that it can only encode 14 digit GTINs (global trade item number) that begin with either a *0* or a *1*. It is not stackable and is not designed to be read omni-directionally.

Enable RSS Expanded

“RSS Expanded” uses the same application identifiers as UCC/EAN-128 codes but it can be split into sections and stacked several rows high, reducing the length of the symbol, while increasing the capacity of data that can be stored. “RSS Expanded” code can be omni-directionally scanned.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.2.18 Composite



Important: To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled. In addition, “Center Bar Code Only” must be disabled.

A composite symbol includes multi-row 2D components making it compatible with linear and area CCD scanners along with linear and rastering laser scanners.

The options available for this parameter represent multi-level components of a composite symbol.

Enable CC-C And Enable CC-AB

To activate these components, set these parameters to **on**.

Enable TLC-39

This composite component integrates MicroPDF417 with the linear code. Setting this parameter to **on** enables this parameter.

6.10.2.19 PDF-417

Enable

Setting this parameter to **on** enables PDF-417 two dimensional (2D) coding.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.2.20 Micro PDF-417

Enable

Setting this parameter to **on** enables “Micro PDF-417” bar code scanning. Micro PDF-417 is a multi-row symbology that is useful for applications requiring greater area efficiency but lower data capacity than PDF-417.

Code 128 Emulation

When this parameter is enabled, the scanner transmits data from certain Micro PDF-417 symbols as if it was encoded in Code 128 symbols.

If Code 128 Emulation is enabled, the following Micro PDF-417 symbols are transmitted with one of the following prefixes:

JC1 if the first codeword is 903-907, 912, 914, 915

JC2 if the first codeword is 908 or 909

JC0 if the first codeword is 910 or 911

If Code 128 Emulation is set to off, the Micro PDF-417 symbols are transmitted with one of the following prefixes:

JL3 if the first codeword is 903-907, 912, 914, 915

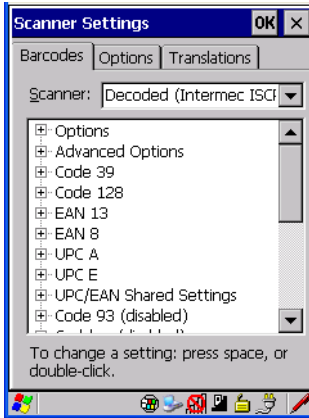
JL4 if the first codeword is 908 or 909

JL5 if the first codeword is 910 or 911

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3 Decoded (ISCP)



- Tap on the **Scanner** drop-down menu, and choose **Decoded (ISCP)**.

6.10.3.1 Decoded (ISCP) - Options

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.

Double-tapping on this parameter displays a dialog box in which you can enter a value between *1* and *10* seconds.

6.10.3.2 Decoded (ISCP) - Advanced Options

Continuous Scan Mode

Setting this parameter to **on** keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Low Power Timeout

To extend laser life, you can select the length of time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned—a successful decode restores normal blinking.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec*, *1 min*, *2 min*, or *3 min*.



*Note: This parameter is only used if the Trigger Mode has been set to **Continuous On** and the hand-held is mounted in a fixed position; otherwise, 'Low Power Timeout' is not used.*

Parameter Scanning

Setting this parameter to **Enabled** allows decoding of parameter bar codes.

Same Read Validate

The data is only transmitted after repeated reads give the same result. The value assigned at this parameter determines the number of reads required, from *0* to *10* times.

Same Read Timeout

Prevents the same bar code from being read more than once. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

Diff Read Timeout

Prevents unwanted reading of other bar codes on the same label. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

6.10.3.3 Code 39

Enable

Setting this parameter to **on** enables “Code 39”.

Full ASCII

If this parameter is enabled, the characters *+*, *%*, and */* are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

Start/Stop Transmit

Setting this parameter to **on** enables the transmission of start and stop characters, which are usually not transmitted. Code 39 can start and end with either a * or a \$ character (see also the next parameter).

Accepted Start Char

This parameter allows the user the option of using one of the two start/stop characters or both (\$ char, * char, \$ and * char).

Check Digit Verification

Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: *Disabled*, *MOD 43 Check*, *French CIP*, or *Italian CIP*.



Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Italian CIP (Italian pharmaceutical) is also known as Code 32. It is transmitted as a standard Code 39 if checksum is not validated.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.4 Code 128

Enable

Setting this parameter to **on** enables “Code 128”.

GS1-128

“GS1-128” is the GS1 implementation of the Code 128 barcode specification. The former correct name was UCC/EAN-128.

GS1-128 Identifier

“GS1-128 Identifier” allows the AIM ID "]C1" for EAN 128 to be transmitted or removed. By default, this identifier is transmitted if EAN 128 is enabled.

GTIN Compliant

GTIN (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.



Important: When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.

FNC1 Conversion

“FNC1 Conversion” allows the FNC1 character to be converted to another character for applications that cannot use the default <GS> Group Separator or hex (1d).

Double-tapping on this option displays a dialog box listing the allowable range: 0 to 255.

Enable ISBT 128

To successfully scan this type of bar code (International Society of Blood Transfusion), this option must be set to **on**. If you enable this type of bar code, Code 128/EAN 128 is deactivated to avoid any confusion.

ISBT Concat Transmit

The codes are not concatenated by default. You need to choose one of the options provided for this parameter to send concatenated code. Choosing *Only Concatenated Codes* transmits only concatenated codes—single codes will not be transmitted. Choosing *Concatenated or Single* transmits single codes or concatenated codes. If only one code of a pair is read, that code will be transmitted as a single code. If both codes in a pair are detected, they will be concatenated provided that “ISBT Concat Any Pair” (see below) is enabled.

ISBT Concat Any Pair

Enabling this parameter causes all code pairs that can be, to be concatenated even if they do not comply with Section 4.1 of the “ISBT 128 Bar Code Symbology and Application Specification for Labeling of Whole Blood and Blood Components” (June 2000, Version 1.2.1).

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

Check Digit Verification

The available options for this parameter are *Disabled* or *French CIP*. This parameter uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.



Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.5 EAN 13 Settings

Enabled

Set this parameter to **on** to enable “EAN 13”.

ISBN Conversion

When this parameter (International Standard Book Number) is enabled, the first 3 characters (‘978’) are ignored and the checksum (0,9, ‘X’) is calculated on the remaining characters.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 143.

6.10.3.6 EAN 8

Enabled

Set this parameter to **on** to enable “EAN 8”.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Convert To EAN 13

If this parameter is enabled, an EAN 8 bar code is converted to EAN 13.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 143.

6.10.3.7 UPC A

Enabled

Set this parameter to **on** to enable “UPC A” bar code scanning recognition.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Transmit Number System

If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert To EAN 13

If this parameter is enabled, a UPC A bar code is converted to EAN 13.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 143.

6.10.3.8 UPC E

Enabled

Set this parameter to **on** to enable “UPC E”.

Enable UPC-E1

Set this parameter to **on** to allow “UPC-E1” (zero suppressed) bar code scans.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Transmit Number System

If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert To UPC-A

This parameter converts UPC E (zero suppressed) decoded data to UPC A format before transmission. After conversion, data follows UPC A format and is affected by UPC A programming selections (e.g. Check Digit).

Prefix/Suffix

Refer to “Prefix/Suffix” on page 143.

6.10.3.9 UPC/EAN Shared Settings

The setting assigned to the “Addendum” parameter associated with this option is shared across all UPC and EAN bar codes.

Addendum

An addendum is a separate bar code, supplementary to the main bar code. This parameter provides two options: *Not Required but Transmitted if Read* or *Required and Transmitted*.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When “Addendum” is set to *Not Required but Transmitted if Read*, the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to *Required and Transmitted*, the scanner does not accept the main bar code without an addendum.

Addendum Add-on 2 And Addendum Add-on 5

Enabling these parameters sets the length of the addendum bar code to either 2 or 5 characters.

GTIN Compliant

GTIN (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.



Important: When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.

Reading Range

This parameter determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

6.10.3.10 Code 93

Enabled

Set this parameter to **on** to enable “Code 93”.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.11 Codabar

Enabled

Set this parameter to **on** to enable “Codabar”.

Start/Stop Transmit

Codabar can use the following sets of characters as start and stop characters:

a, b, c, d

A, B, C, D

a, b, c, d, /, t, n, *, e

DC1, DC2, DC3, DC4

Thus, when a set is chosen, the first and last digits of a Codabar message must be one of those characters and the body of the message should not contain these characters. Setting this parameter to *Not Transmitted* strips the start and stop characters from this bar code.

CLSI Library System

When enabled, spaces are inserted after characters 1, 5, 10 in the 14-character label (used in the USA by libraries using the CLSI system).

Check Digit Verification

When enabled, this parameter checks the integrity of a symbol to ensure it complies with a specified algorithm—either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for “Codabar” can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can choose to set L1 as *Minimum Length* or L1,L2,L3 as *Fixed Length*.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.12 MSI Plessey

Enabled

Set this parameter to **on** to enable “MSI”.

Enable Plessey

Set this parameter to **on** to enable “Plessey”.

Check Digit Verification

The available options for this parameter are MOD 10 Check and Double MOD 10 Check. This parameter uses the specified algorithm of the option you’ve chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Plessey Transmit Check Digit

If the check digit is to be transmitted with the Plessey data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Plessey Minimum Length

Minimum lengths for the Plessey bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.13 Code 11

Enabled

Set this parameter to **on** to enable “Code 11”.

Check Digit Verification

The available options for this parameter are *MOD 10 Check* and *Double MOD 10 Check*. This parameter uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.14 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable “Interleaved 2 of 5”.

Reading Range

This parameter determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

Check Digit Verification

The available options for this parameter are *Disabled*, *MOD 10 Check* and *French CIP*. “Check Digit Verification” uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.



Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for “Interleaved 2 of 5” can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can choose to set L1 as *Minimum Length* or L1,L2,L3 as *Fixed Length*.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.15 Matrix 2 of 5

Enabled

Set this parameter to **on** to enable “Matrix 2 of 5”.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.16 Discrete 2 of 5

Enabled

Set this parameter to **on** to enable “Discrete 2 of 5”.

Standard 2 of 5 Format

This parameter allows you to choose a standard format – either *Identicon* (6 start/stop bars) or *Computer Identics* (4 start/stop bars).

Check Digit Verification

The available options for this parameter are *Disabled* and *MOD 10 Check*. “Check Digit Verification” uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for “Discrete 2 of 5” can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can chose to set L1 as *Minimum Length* or L1,L2,L3 as *Fixed Length*.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.17 Telepen

Enabled

Set this parameter to **on** to enable “Telepen”.

Format

This parameter allows you to set the bar code character format to either *ASCII* or *Numeric*.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.18 RSS Code (Reduced Space Symbology)

Enable

Setting this parameter to **on** enables “RSS Code” scanning capability.

Enable RSS-14

RSS-14 code can be either purely linear or split in half with one half stacked on top of the other half. Stacking the code reduces the bar code length, and providing the nominal height of the code is maintained, it can be omni-directionally scanned.

Enable RSS Limited

“RSS-Limited” is restricted, in that it can only encode 14 digit GTINs (global trade item number) that begin with either a *0* or a *1*. It is not stackable and is not designed to be read omni-directionally.

Enable RSS Expanded

“RSS Expanded” uses the same application identifiers as UCC/EAN-128 codes but they can be split into sections and stacked several rows high, reducing the length of the symbol, while increasing the capacity of data that can be stored. “RSS Expanded” code can be omni-directionally scanned.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.19 PDF-417

Enabled

Set this parameter to **on** to enable “PDF-417”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.20 Micro PDF-417

Enabled

Set this parameter to **on** to enable “Micro PDF-417”.

Code 128 Emulation

When this parameter is enabled, the scanner transmits data from certain Micro PDF-417 symbols as if it was encoded in Code 128 symbols.

If Code 128 Emulation is *enabled*, the following Micro PDF-417 symbols are transmitted with one of the following prefixes:

JC1 if the first codeword is 903-907, 912, 914, 915

JC2 if the first codeword is 908 or 909

JC0 if the first codeword is 910 or 911

If Code 128 Emulation is set to *off*, the Micro PDF-417 symbols are transmitted with one of the following prefixes:

JL3 if the first codeword is 903-907, 912, 914, 915

JL4 if the first codeword is 908 or 909

JL5 if the first codeword is 910 or 911

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.3.21 Codablock

Enable Codablock A

Set this parameter to **on** to enable “Codablock type A”.

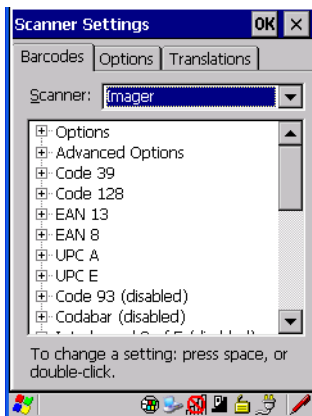
Enable Codablock F

Set this parameter to **on** to enable “Codablock type F”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4 Imager



- Tap on the **Scanner** drop-down menu, and choose **Imager**.

6.10.4.1 Imager - Options

TekImager Enabled

Setting this option to **on** enables the imager installed in your hand-held.

Continuous Scan Mode

Setting this parameter to on keeps image capture active and continuously decoding as long as the scanner button is pressed and held down.

Center Bar Code Only



Note: This parameter must be disabled when reading Composite bar codes.

When more than one bar code is visible in a single snap shot, this parameter allows you to specify that only the centre image within the imager framing marker be read. When this parameter is set to **on**, the target dot is pointed at the centre image and only that image is returned.

Max Number Barcodes

This parameter specifies the maximum number of bar codes the imager will attempt to decode in an image. A maximum of 6 bar codes can be decoded at one time.

Barcodes Must Decode

This parameter specifies the minimum number of bar codes that the imager must decode in order to report success.



Note: This number must be less than the number of bar codes assigned to “Max Number Barcodes”. The driver validates and reassigns the value if necessary.

Window Width

“Window Width” determines the width of the captured image in pixels.



Note: The driver will validate and reassign the value assigned to this parameter, if necessary; the driver will also use the “Window Width” value to horizontally center the image in the field of view.

Window Height

This parameter determines the height of the captured image in pixels.



Note: The driver will validate and reassign the value assigned to this parameter, if necessary; the driver will also use the “Window Height” value to vertically center the image in the field of view.

Dot Time (msec)

The value selected for “Dot Time (msec)” determines (in milliseconds) how long the targeting dot remains on before the scanner begins capturing images. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of between 0 and 3000. A value of 0 disables the target dot.

6.10.4.2 Imager - Advanced Options



Important: Do not adjust the advanced options without first consulting Psion Teklogix technical support.

Factory Defaults On Reboot

The value assigned to this parameter determines whether or not the driver will restore the factory defaults to the imager device on the next reboot.



Note: The driver will default the imager device on a ‘clean’ reset, regardless of the value of this parameter.

Min Scan Duration

This parameter defines the minimum amount of time in seconds that the imager will scan when the trigger is pressed and held down without successful decode.



Note: The actual scan duration when the trigger is pressed relies on the value assigned to “Captures Per HW Trigger”, below.

Captures Per HW Trigger

The value assigned to this parameter determines the number of captures the imager device will take while the imager's internal hardware trigger is held down.



Note: This parameter, together with “Min Scan Duration”, determines the actual scan duration. When the scan trigger is pressed and held down, the driver starts a timer based on the value of “Min Scan Duration” and also sends a command to emulate the hardware trigger. When completed, if the time has not yet expired, it will send another command to the imager device, forcing the imager to flash again using the value assigned to “Captures Per HW Trigger”.

Auto Exposure



Important: This parameter value should only be changed by qualified Psion Teklogix personnel. It should be left at the default value: on.

Setting this parameter to **on** allows the imager to make automatic gain, integration and illumination adjustments based on ambient light before capturing the bar code. If the adjustment is insufficient, further adjustments are made automatically before another image is captured.

Fast Converge



*Note: “Auto Exposure” must be set to **on** in order for this parameter to function.*

Keep in mind that while this parameter can improve imager performance, “Fast Converge” increases battery power consumption.

Setting this parameter to **on** speeds the “Auto Exposure” process. It allows the imager to rapidly snap a number of bar code capture attempts while finding ideal values for gain, integration and illumination.

Max Gain, Max Integration And Max Illumination



Important: *These parameter values should only be changed by qualified Psion Teklogix personnel.*

These parameters represent internal values used by the 2D imager. The “Auto Exposure” parameter automatically adjusts the *Max Gain*, *Max Integration* and *Max Illumination* parameters to produce the best bar code read. Keep in mind that “Auto Exposure” must be set to **on** in order for these parameter values to be automatically adjusted.

Double-tapping on any of these parameters displays an associated dialog box in which an allowable range is displayed: *Max Gain* – 357 to 7920, *Max Integration* – 0 to 65535, *Max Illumination* – 0 to 7.

Decoder Timeout

The decoder is a set of algorithms that examine the image and attempt to find the bar codes, and then turn the pixels into data that the computer can use—this process takes time. “Decoder Timeout” limits the amount of time the decoder will spend attempting to decode an image, and forces it to stop and grab a new image, which will probably be easier to decode.



Note: When decoding multiple bar codes in one image, the value assigned to ‘Decoder Timeout’ should be increased to 200ms/extra bar code after the first.

Adaptive Windowing

“Adaptive Windowing” is an advanced technique used to speed up bar code recognition in certain applications. This parameter automatically reduces the size of the window to the user-programmed window size when it successfully decodes (which reduces decode time the next time it is used), but increases it to the full size window on a failed decode.



Note: This feature assumes that you have reached an understanding about how the device operates in your application, and that, after a learning period, operators will get used to using the imager in one particular way. It also assumes that a trained operator will usually only have near miss scenarios.

Constant Illumination

“Constant Illumination” is used to reduce the intrusiveness of the device’s illumination on the observer. Instead of the illumination turning on and off every time the device attempts a decode (2-4 times per second), the illumination stays on from the time the trigger is pulled until a decode is successful. This feature is useful in low light environments, since it will also reduce the distraction that the illumination can have on nearby co-workers.

6.10.4.3 Code 39 Settings

Enabled

Set this parameter to **on** to enable “Code 39”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.4 Code 128 Settings

Enabled

Set this parameter to **on** to enable “Code 128”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.5 EAN 13

Enabled

Set this parameter to **on** to enable “EAN 13”.

Addendum

An addendum is a separate bar code, supplementary to the main bar code. This parameter provides three options: *Disabled*, *Optional* and *Required*. Depending on the value chosen for this parameter, an addendum is recognized or ignored.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When “Addendum” is set to *Disabled*, the scanner does not recognize an addendum. If this parameter is set to *Optional*, the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to *Required*, the scanner does not accept the main bar code without an addendum.



Note: Setting “Addendum” to ‘Optional’ reduces performance. It should only be chosen if at least some of the bar codes being read have addendums.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 143.

6.10.4.6 EAN 8

Enabled

Set this parameter to **on** to enable “EAN 8”.

Addendum

Refer to “Addendum” on page 171.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 143.

6.10.4.7 UPC A

Enabled

Set this parameter to **on** to enable “UPC A”.

Addendum

Refer to “Addendum” on page 171.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 143.

6.10.4.8 UPC E

Enabled

Set this parameter to **on** to enable “UPC E”.

Addendum

Refer to “Addendum” on page 171.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 143.

6.10.4.9 Code 93

Enabled

Set this parameter to **on** to enable “Code 93”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.10 Codabar

Enabled

Set this parameter to **on** to enable “Codabar”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.11 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable “Interleaved 2 of 5”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.12 RSS Code (Reduced Space Symbology)

Enable

Setting this parameter to **on** enables “RSS Code” scanning capability.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.13 Composite



Important: *To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled.*

Enabled

Set this parameter to **on** to enable “Composite” bar codes.

6.10.4.14 PDF-417

Enable

Setting this parameter to **on** enables PDF-417 two dimensional (2D) coding.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.15 Micro PDF-417

Enable

Setting this parameter to **on** enables “Micro PDF-417” bar code scanning. Micro PDF-417 is a multi-row symbology that is useful for applications requiring greater area efficiency but lower data capacity than PDF-417.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.16 2D Data Matrix

Enable

Set this parameter to **on** to enable “Data Matrix”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.17 2D QR Code

Enabled

Set this parameter to **on** to enable “2D QR Code”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.18 2D Maxicode

Enabled

Set this parameter to **on** to enable “2D Maxicode”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.19 2D Aztec

Enabled

Set this parameter to **on** to enable “Aztec”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.20 Postal: PlaNET

Enabled

Set this parameter to **on** to enable “Postal: PlaNET”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.21 Postal: PostNET

Enabled

Set this parameter to **on** to enable “Postal: PostNET”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.22 Postal: Australian

Enabled

Set this parameter to **on** to enable “Postal: Australian”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.23 Postal: Japanese

Enabled

Set this parameter to **on** to enable “Postal: Japanese”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.24 Postal: Korean

Enabled

Set this parameter to **on** to enable “Postal: Korean”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.4.25 Postal: Royal

Enabled

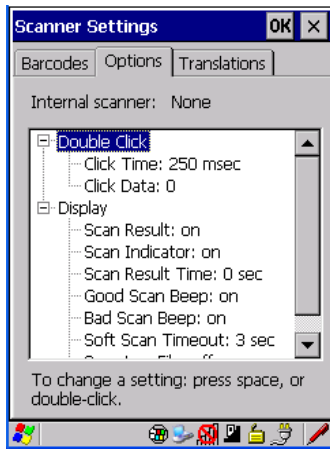
Set this parameter to **on** to enable “Postal: Royal”.

Field Size/Chars

Refer to “Field Size/Chars” on page 142 for details.

6.10.5 Options

This tab allows you to tailor the double-click parameters and the display options associated with your scanner.



6.10.5.1 Double Click Parameters

Click Time (msec)

This parameter controls the maximum gap time (in milliseconds) for a double-click. If the time between the first and second clicks of the scanner trigger is within this time, it is considered a double-click. The allowable range is 0 to 1000. A value of zero disables this feature.

A double-click produces different results depending on whether or not a value is assigned in the “Click Data” parameter. When a value is not assigned for the “Click Data”, double-clicking the scanner trigger overrides the target dot delay set in the “Dot Time” parameter and

initiates a normal scan sweep. If a value is assigned for the “Click Data” parameter, double-clicking the scanner trigger inserts the “Click Data” value rather than initiating a scan.

Click Data

For both integrated and external scanners, this parameter determines which character is sent to the application installed in your hand-held following a double-click. A dialog box appears, asking that you press the key you want to insert. The ASCII/Unicode key value of the keypress is displayed.

6.10.5.2 Display Parameters

Scan Result

When this parameter is enabled, the type of bar code and the result of the scan appear on the screen. Note that this information is only displayed after a successful decode and is visible only while the scanner trigger is pressed. When the trigger is released, this information is cleared from the screen.

Scan Indicator

When this parameter is enabled, the laser warning logo appears on the display whenever the scanner is activated.

Scan Result Time (sec)

The value assigned to the “Scan Result Time (sec)” parameter determines how long the scan results of a successful scan are displayed on the screen. Time is measured in seconds, and a value of 0 (zero) disables the parameter. When you choose this option, a dialog box appears where you can enter a value.



Note: To remove the scan result from the screen before the “Result Time” has expired, point the scanner away from the bar code and press the trigger.

Good Scan Beep And Bad Scan Beep

These parameters determine whether or not the hand-held emits an audible scanner “beep” when a good (successful) scan or a bad (unsuccessful) scan is performed. Set these parameters to either **on** to enable the beeper or **off** to disable it.

Soft Scan Timeout

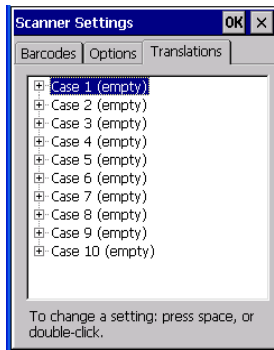
This parameter is used by the SDK “Scan” function (soft-scan: starting a scan session via the SDK function, instead of a physical user trigger press). The value assigned to this parameter determines the soft-scan timeout from 1 to 10 sec (default is 3 sec).

Scan Log File

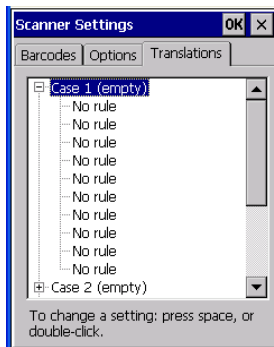
If this parameter is enabled, the input barcode and the modified/translated output bar code are logged in the file `\Flash Disk\ScanLog.txt`. Keep in mind that if the “Scan Log File” is enabled, there is a slight performance effect when performing multiple scans since the log file is written to persistent storage.

6.10.6 Translations Tab

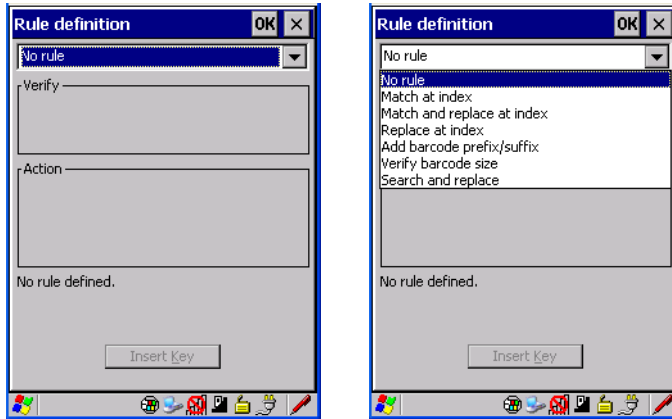
The *Translations* tab allows you to define up to 10 cases, each consisting of up to 10 rules in sequential order. Only one case will be applied to a bar code and a case will only be applied if all rules specified in the case are successful—if a rule within a case fails, the entire case fails.



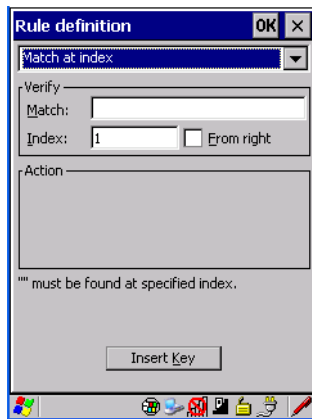
- In the *Translation* tab, tap on the **Case #** to create rules.



- Tap on the **No rule** drop-down menu to display the rules.



When you choose a rule, an associated screen is displayed in which you can define the rule.



6.10.6.1 Case Rules

The case rules are defined as follows:

- *No rule*—ignored.
- *Search and replace*—replaces all instances of the match string. (Note that this rule cannot fail.)
- *Match at index*—matches the match string at a specified index.
- *Match and replace at index*—matches the match string at a specified index and replaces/changes it.
- *Replace at index*—replaces/changes unspecified data in a given range.

Preliminary Draft

Case Rules

- *Add barcode prefix/suffix*—adds a global prefix or suffix.
- *Verify barcode size*—verifies the bar code size. This rule should generally be assigned first, before creating subsequent rules.



Note: Keep in mind that the effects of previously applied rules must be taken into account when creating subsequent rules. For example, if the bar code size is important, it should be checked before any rules that might change the size are applied.

Translation information about the status of each case/rule is displayed in the scan log file (see “Scan Log File” on page 178) when enabled. This is useful if a case fails, and you are trying to determine why a rule is failing.

PERIPHERAL DEVICES & ACCESSORIES

7

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7.1 Carrying Accessories

There are a variety of carrying accessories to help the operator work safely and comfortably with the Warrington.

Table 7.1 Carrying Accessories

Carrying Accessory	Model Number
Hand Strap	PX3024
Wrist Strap (with stitched stylus holder)	PX3028
Soft Shell Carrying Holster (compatible with pistol grip)	PX3020

Table 7.1 Carrying Accessories

Carrying Accessory	Model Number
Shoulder Strap	PX3022
Belt Clip	PX3025



Important: *Do not use adhesives such as Loctite to secure screws on carrying accessories. These chemicals may damage the plastic casing.*

7.1.1 Attaching The Hand Strap

Attaching the hand strap helps protect the Warrington from accidental drops. The hand strap is attached by threading the lanyard through the left- or right-hand eyelet at the base of the unit. The hand strap is attached by threading the lanyard through the eyelet on the back of the Warrington to provide a secure means for operators to carry the hand-held.

The hand strap is attached by fixing the ends of the strap to the anchors located on the back and bottom of the unit (see Figure 7.1).

Figure 7.1 Attaching The Hand Strap

7.1.2 Soft Shell Holster

A soft shell holster with removable belt and swivel holster pad can be used to hang a Warrington from your waist.

- Insert the belt in the swivel holster pad.

- Attach the pad on either the left or right side of the holster case, depending on whether you are left- or right-handed.
- Fasten the belt comfortably around your waist. Slide the adjustable ring on the belt to tighten the holster in place.
- Connect the safety tether to one of the clips on the bottom of the soft shell holster. Connect the other end to the hole in the end of the Warrington. This tether will catch the unit in case of a drop. The tether can be adjusted to the operator's height. The clips will break away in case of a severe force.

7.2 The Battery

The Warrington operates on a 3000 mAh Lithium Ion battery pack – Model WA3006.



Note: Review Chapter 8: “Specifications” for detailed information.

7.3 Adaptor Cable Options

The following are adaptors that can be ordered for your Warrington:

Table 7.2 Cable Model Numbers And Description

Model Number ??	Adaptor Cable Description ??
WA1002	Tether to USB device. This cable is used to connect USB devices such as USB Flash memory devices.
WA4020-G2	Tether to RS-232. This is a full RS-232 port on COM2.
WA4001-G2	Tether to USB Client. (For ActiveSync)
WA4010-G1	USB to Ethernet adaptor.
WA4015	USB/RS-232 adaptor. This cable is used with docking station WA4003-G2.

7.4 Chargers And Docking Stations



Important: Keep in mind when ordering a charger or docking station, you must also order the appropriate power cord separately.

Psion Teklogix offers a variety of chargers and docking stations for the Warrington. These include:

- AC Adaptor – Model No. PX3010
- Automotive Power Adaptor – Model No. WA3113-G2. ??
- Desktop Docking Station – Model No. PX3001
- Quad Docking Station – Model No. PX3004

7.4.1 Installation - Chargers And Docking Stations

When installing a charger or docking station, consider the following guidelines.

- Keep chargers and docking stations away from excessive dirt, dust and contaminants.
- Chargers will not charge batteries outside an ambient temperature range of 0 °C to 45 °C (32 °F to 113 °F). It is recommended that the charger or docking station be operated at room temperature—between 18 °C and 25 °C (64 °F to 77 °F) for maximum performance.

After unpacking your unit:

- Visually inspect the charger for possible damage.
- Install the IEC power cord and apply power.

7.4.2 Power Consumption Considerations

Check to ensure the mains circuit supplying chargers and/or docking stations is adequate for the load, especially if several chargers and docking stations are being powered from the same circuit.

- Quad docking station—can consume up to 3A @ 120VAC or 1.5A @ 240VAC.

7.4.3 Operator Controls

Warrington docking stations and chargers have no operator controls or power switches.

7.4.4 Important Charger Safety Instructions

- **SAVE THESE INSTRUCTIONS**—This manual contains important safety and operating instructions for battery chargers.
- Before using the battery charger, read all instructions and cautionary markings on (1) battery charger, (2) battery, and (3) product using battery.
- The mains power cord shall comply with national safety regulations of the country where the equipment is to be sold.
- Use of an attachment not recommended or sold by the battery charger manufacturer may result in fire, electric shock, or personal injury.

- To reduce risk of damage to the electric plug and cord when unplugging the charger, pull the plug rather than the cord.
- Make sure the cord is positioned so that it is not stepped on, tripped over, or otherwise subjected to damage or stress.
- Do not operate the charger with a damaged cord or plug. Replace immediately.
- Do not operate the charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; it should be inspected by qualified service personnel.
- Do not disassemble the charger; it should be repaired by qualified service personnel. Incorrect reassembly may result in electric shock or fire.
- To reduce risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning.
- An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in fire or electric shock. If an extension cord must be used, make sure:
 - The plug pins on the extension cord are the same number, size, and shape as those on the charger.
 - The extension cord is properly wired and in good electrical condition and that the wire size is larger than 16 AWG.
- Do not expose the charger to rain or snow.
- Do not place batteries in the charger if they are cold from extended exposure to a freezer or outside temperatures below 10° C (50° F). Allow them to warm up to room temperature for at least two hours.
- Do not use the charger if, after an overnight charge, any of the batteries feel warmer than the charger housing. The charger should be inspected by qualified service personnel.
- Do not use the charger if any of the batteries or the charger get more than lukewarm. The equipment should be inspected by qualified personnel.

7.5 Desktop Docking Station

The Warrington can be inserted in a desktop docking station, model number PX3001.

Figure 7.2 Desktop Docking Station



Note: The desktop docking charger is shipped with its own user manual. It is critical that it be reviewed for additional information and updates.


The desktop docking station is designed to charge the battery installed in the Warrington along with a spare battery pack. It is equipped with two USB ports—a Host USB port to connect peripherals such as a printer, keyboard, etc. and a Client USB to connect the docking station to a PC.

Figure 7.3 Back Of Desktop Docking Station



Important: This docking station can only be used to charge Psion Teklogix approved Lithium-Ion batteries.

7.5.1 Charging A Battery Installed In The Warrington

- Insert the DC power cable to the DC IN port on the desktop docking station. Plug the pronged end of the cable into an AC outlet.
- Slide the Warrington into the docking station, making certain that the LIF (Low Insertion Force) port on base of the hand-held is securely seated on the docking station connector pins. An icon is displayed briefly in the navigation bar at the top of the hand-held screen indicating that the unit is properly installed in the station: 

This icon is only displayed when the unit is switched on.

The LED on the Warrington lights up indicating that the unit has external power and battery charging will begin. It is safe to leave the unit in the desktop docking station while it is not in use—the battery will not be overcharged.

7.5.2 Charging A Spare Battery

Insert the battery in the spare battery charge well at the back of the docking station, aligning the contacts on the battery with the contacts in the spare battery charge well.

7.5.3 Battery Charge Duration

A fully discharged battery can take up to 4?? hours to charge. The desktop docking station stops applying power to the battery when it is fully charged—there is no risk of overcharge if the battery remains in the charge well.

7.5.4 Charger LED Indicators

The desktop docking station is equipped with a single tri-coloured LED indicator in the lower-right corner of the front panel that indicates four charge states:

Table 7.3 Desktop Docking Station Charger LED Behaviour

LED Behaviour	Charge Status
Off	No battery detected in the slot.
Solid Green	Charge complete.
Solid Yellow	Battery charged to less than 75% of capacity.
Flashing Green	Battery charged to greater than 75% of capacity.
Solid Red	Battery is not charging. The battery temperature is outside of charge range of 0°C to 50°C, or there is a battery fault.
Flashing Red Is there a flashing red indicator??	Battery is not charging. Battery fault.



Note: Battery charging continues whether the hand-held is switched on or off.

7.5.5 Troubleshooting The Charging Operation Of The Dock

7.5.5.1 Excessive Charge Duration

The charger is equipped with a recalibration function—a function that fully discharges and then fully recharges the battery. This process is necessary to recalibrate the battery capacity gauge internal to the battery. The charger attempts recalibration when:

- The battery capacity is at less than 30%, and

- The battery has undergone more than 40 partial charge cycles since the last full discharge.

The recalibration function extends the charge time by up to 2 hours.

7.5.5.2 Indicator Flashing Red

If the indicator flashes red:

- Remove the battery and disconnect the mains power cable.
- Wait at least 20 seconds, and then plug the cable in again.

If the charge well LED continues to flash red, the charger is defective and requires service.

If the indicator is flashing red, there is a power supply problem and the charger requires service.

7.5.5.3 Power LED Does Not Light Up

- Remove the battery, and unplug the charger.
- Connect another device to the mains outlet to ensure there is power.
- Remove the IEC mains power cable from the charger, and check it for damage.
- Reconnect the mains cable in the charger and mains outlet.

If the power LED still does not light up:

- Unplug the mains cable, and check the fuse at the rear of the charger.

If the fuse appears to be intact, the charger requires service.

7.5.5.4 Indicator Does Not Light When Battery Installed

- Remove the battery, and clean the contacts on the battery and the charge well.
- Reinstall the battery, and check that it is fully seated in the charger well.
- Inspect the charge well contacts for damage (are they bent, flattened, twisted or broken).
- Try inserting a battery that you know to be working in the charger well.
- Reconnect the mains power cable, and check that the charger well indicator flashes at powerup.

7.5.6 Linking A Warrington To A PC

The desktop docking station can be connected to a PC so that you can exchange files in the same way that you would between PC drives. A USB cable is included with your docking station



To link the Warrington to a PC:

- Insert the hand-held in the desktop docking station.
- Insert the USB cable into the docking station Client USB connector. Attach the other end of the cable to a USB port on the PC.

7.5.7 Linking A Warrington To An Ethernet Network

An USB-Ethernet adaptor cable – model number PX??? – is used to connect the Warrington to an Ethernet network through a desktop docking station.

Figure 7.4 USB-Ethernet Adaptor Cable



- Insert the adaptor USB connector into the Host USB port on the desktop docking station.
- Connect your network Ethernet cable to the Ethernet port on the adaptor cable.

7.5.7.1 Power Source

The internal battery is the only source of power and the battery can only be charged with charger Model WA3004-G1.

7.7 Automotive Power Adaptor—Model #WA3113-G2



Important: *It is critical that you review the safety instructions outlined in the quick start guide enclosed with your automotive power adaptor before using the accessory.*

The automotive power adaptor allows you to power your hand-held and recharge your battery using power drawn from your vehicle's automotive power outlet.

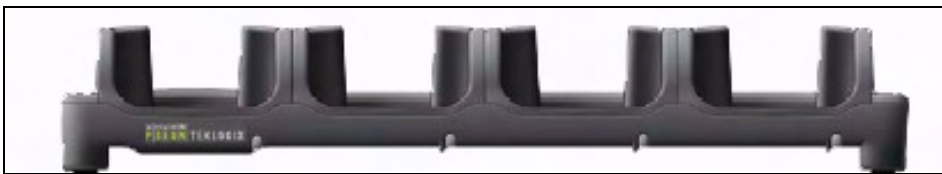
Figure 7.5 Automotive Power Adaptor

- Unscrew the adaptor end-cap, and remove the fuse inside the adaptor.
- Replace it with the fuse provided with your kit, and screw the adaptor end-cap back into position.
- Insert the DC power plug into the DC IN port at the base of the Warrington.
- Insert the automotive power adaptor plug into automotive power outlet in your vehicle.



Note: Battery charging continues whether the hand-held is switched on or off.

7.8 Quad Docking Station - PX3004



Note: The quad docking station is shipped with a docking manual. It is critical that this manual be reviewed for additional information and updates.

The quad docking station permits each of four docked Warrington hand-helds to communicate with a 10/100 BaseT Ethernet network at greater than 2 Mbps. It also provides sufficient power to operate and fast charge the batteries in the units.

7.8.1 Quad Docking Station Setup

After unpacking the unit:

- Visually inspect the unit for any damage.
- Install the IEC power cord and apply power.

A green indicator in the lower-right corner of the front panel lights up to indicate that power is present.

- Attach a CAT5 RJ45 network patch cable (supplied) between your network and the RJ45 jack on the rear of the dock.

A green LED is illuminated next to the RJ45 connector when a valid network link is established.


A user application must be loaded onto each Warrington that utilizes the quad dock for communication. When the network is connected and this application is loaded, the quad dock is ready for use.

7.8.2 Quad Indicators

The quad dock is equipped with a power indicator LED and RJ45 link and traffic indicator LEDs. When a valid network link is established, a green LED is illuminated next to the RJ45 connector.

7.8.3 Inserting A Warrington In The Quad Docking Station

- Slide the Warrington into the cradle portion of the quad dock until lightly latched.

The hand-held detects that it is in a quad dock and momentarily displays the appropriate icon in the navigation bar at the top of the screen: 

The LED on the hand-held unit lights up to show it has external power and may start charging the battery.

Interaction with the Warrington while in the quad dock is a function of the user application software used to communicate with the host network.

7.8.4 Network Access

The quad docking station has one 10/100 Ethernet port. You can insert up to four hand-held units. The hand-helds are connected to an internal USB hub. The hand-held unit automatically detects insertion into a quad docking station and loads the appropriate drivers to communicate with the USB/Ethernet converters.

7.8.4.1 Network Addressing

Although the USB converters have fixed Ethernet MAC addresses, there is generally no correlation between these addresses and a specific hand-held. The host application uses standard TCP/IP protocol to name, locate and communicate with a specific Warrington on the network.

If a link is established between a Warrington and a host, the application on the host and on the hand-held must have a recovery mechanism in the event that the Warrington is removed from the dock and the link is interrupted.

7.8.5 Battery Charging - LED Behaviour

The quad docking station supplies DC power to enable the Warrington internal fast charger. Charge status is displayed on the hand-held LED—the LED turns red while the battery is being charged and turns green once the charge is complete. If the battery is fully charged when the unit is inserted in the docking station, the LED flashes red for less than a second and then turns green. Battery charging continues whether the Warrington is switched on or off.

It can take up to 4 hours to fully charge the internal battery.

7.8.6 Troubleshooting

The indicators, applications and drivers required to use and monitor the docking station are installed on the Warrington—no indicators or applications are present on the docking station itself.

7.8.6.1 Network Link Unsuccessful

If a network link fails, the Warrington application alerts the operator that the link was unsuccessful.

7.8.6.2 Warrington LED Does Not Light When Docked

- Check that the quad docking station has power: Is the Power LED on the docking station illuminated?
- Try inserting the Warrington in another well in the quad dock.
- Check for dirt or contamination on the docking contacts at the bottom of the Warrington. Wipe the contacts with a damp cloth if necessary.
- Check the pogo pins inside the dock cradle for dirt. Gently wipe with a damp cloth if they appear to be dirty or discoloured.
- Check that the pogo pins are not bent or damaged.
- Remove and reinsert the Warrington in the cradle, and check that the latch is holding the unit in place (the pogo pins must be compressed for proper contact).
- Make certain that the battery installed in the Warrington is not defective.

7.9 The Vehicle Cradle

The vehicle cradle is a highly ruggedized, single station dock. Although it provides quick insertion and removal, the cradle holds the Warrington securely even when operated in high vibration environments.



Note: Shock and vibration specifications for the Warrington are verified using Psion Teklogix-approved RAM mounts and mounting hardware. Use of non-certified Psion Teklogix mounting hardware is not recommended, and may void warranty coverage.

The vehicle cradle is Model # WA1310-G2???.

A port replicator option is available for powered vehicle cradles. Refer to “The Port Replicator” on page 200 for details.

7.9.1 Vehicle Cradle Mounting Recommendations

Before mounting a vehicle cradle in a vehicle, there are a number of operator safety issues that require careful attention. An improperly mounted cradle may result in one or more of the following: operator injury, operator visibility obstruction, operator distraction and/or poor ease of egress for the operator. Psion Teklogix strongly recommends that you seek professional mounting advice from the vehicle manufacturer.

Cable routing within a vehicle cab also requires careful consideration, especially for separately tethered scanners and other devices with loose cables. If you are unable to obtain suitable advice, contact Psion Teklogix for assistance. Note also that for better protection, the equipment should be mounted inside the vehicle roll cage.

Pedestal mounts are recommended for all fixed mount locations because they offer optimal operator access. In addition, for safety reasons, only pedestal mounts with fully locking joints should be used in vehicles. Always adjust the pedestal for the optimum viewing angle, and securely tighten the hex and wing screws.

The most effective way to mount the vehicle cradle is to use the four #8-32 threaded inserts on the rear of the unit. Bolts must not extend more than 10mm (3/8") into the cradle.

To accommodate the service loop of the connector cable, leave a 4" clearance at the bottom of the cradle. Leave a 7" (minimum) clearance at the top of the cradle to allow easy removal of the hand-held. Also remember to leave at least a 3" clearance at the sides of the cradle to allow activation of the release knobs. Refer to the detailed assembly instructions that are packaged with the cradle when selecting a mounting location.

7.9.1.1 Mounting Template

The vehicle cradle is shipped with detailed mounting instructions including a drill template.

7.9.2 Wiring Guidelines

Before installing cables between the cradle and other devices, review the following:

- Ensure that drilling holes will not damage the vehicle or its wiring.
- Protect cable runs from pinching, overheating and physical damage.
- Use grommets to protect cables that pass through metal.
- Use plastic straps and tie-downs to secure cables and connectors in their desired location, away from areas where they may get snagged or pulled.
- Keep cables away from heat sources, grease, battery acid and other potential hazards.
- Keep cables away from control pedals and other moving parts that may damage the cables or interfere with the operation of the vehicle.

7.9.3 Using The Vehicle Cradle

If your Warrington is equipped with a shoulder strap or cover, these accessories need to be removed before installing the unit in a vehicle cradle. There is no need to remove hand straps or tethered devices from the unit.

- Slide the Warrington into the cradle, and press firmly downward until it locks into place. On a vehicle, it's a good idea to pull up on the Warrington to be certain that it is secure.
- To remove the unit, press firmly on the RELEASE button on the front face of the unit until it releases from its latch. The hand-held will be slightly raised so that it can be removed.

7.9.4 Maintaining The Vehicle Cradle

Two latches in the cradle hold the Warrington firmly in place. Although these latches are designed for robustness and endurance, they will wear over time and will no longer lock the hand-held securely in the cradle. For replacement parts and instructions contact Psion Teklogix. Partial disassembly is required.

7.9.5 Powered Cradle Installation In High Voltage Vehicles

Voltages exceeding 60VDC are considered hazardous. For powered cradle installations on vehicles with batteries above this voltage, ensure the powered cradle power connector is mounted in a dry location on the vehicle, or that the connector is insulated with an appropriate waterproof material after installation. The connector must also be installed out of the vehicle operator's reach. Exposing an accessible power connector to water or other liquids could create a hazardous situation resulting in serious injury or death.

Installation of powered cradles in vehicles that operate above 60VDC require special consideration.

Due to the hazardous voltages present on these vehicles, it is necessary to ensure that the powered cradle power supply cable connector is not accessible to the vehicle operator, and does not get exposed to water or other liquids. This can be accomplished in one of the following ways:

- Ensure the power connector is installed in a dry location on the vehicle, away from the vehicle operator's reach (perhaps under a vehicle dash or in a sealed housing).
- Cover the power connector with a waterproof heat shrink material.
- Wrap the connector securely with a waterproof electrical tape in an area out of the vehicle operators reach.

All other installation requirements outlined in this document should also be followed for High Voltage vehicles to insure safe installation and operation of the powered cradle.

7.9.6 Powered Vehicle Cradle Installation

The powered cradle is designed to allow the Warrington to be powered by a vehicle battery. The battery installed in the hand-held is also recharged by the vehicle battery. This option accepts DC power sources ranging from 9 to 20V, with optional pre-regulator.

The vehicle cradle can be ordered with the powered cradle option installed.

Applying a voltage greater than that specified or reversing or reversing polarity may result in permanent damage to the cradle power option and will void the product warranty.

7.9.6.1 Wiring Vehicle Power To The Cradle

A 1.8 meter (6 foot) extension power cable (PN 13985) is supplied with your powered vehicle cradle. This cable should be wired to a filtered, fused (maximum 10A) accessory supply on the vehicle. The power cradle draws no more than 8A (less if the accessory supply is greater than 12V). Any additional wiring, connectors or disconnects used should be rated for at least 10A.

The red lead of the power cable attaches to the positive vehicle supply. The black lead connects to the negative supply—this should be connected to a proper terminal block and not to the vehicle body. The power cradle is fully isolated and can be used with both negative and positive chassis vehicles.

You may have the option of connecting power before or after the ‘key’ switch. It is preferable to wire the power cradle after the key switch—that is, it cannot be turned on without the key on. However, if the operator switches the key off repeatedly for long periods during a shift, it may make more sense to wire the cradle before the switch.

Keep in mind that the Warrington will continue to operate with or without vehicle power as long as its battery has sufficient charge.

If an unfused power source must be used, a fuse assembly (PN 19440) must be added to the extension power cable (the fuse and instructions are supplied with the cable). Use only a 10A slow blow UL approved fuse in the fuse assembly.

7.9.7 The Port Replicator



The port replicator (Model# WA4005-G1) is an optional accessory that allows tethered devices as well as mounted peripherals (e.g., bar code printers or weigh scales) to be attached to the vehicle cradle. The replicator can be used with or without the cradle power option.

The functionality of the Warrington tether port is replicated into RS-232 serial interfaces by the port replicator. It provides the user with 3 DB9 serial interfaces as well as one Type B USB port (for connecting a Host device).

7.10 Scanners And Imagers

The Warrington supports a 1D laser scanner (SE955) and a 1D imager (EV15) options to address a variety of user application requirements. The scanner/imager installed in your unit can be configured using the *Scanner Settings* dialog box in the *Control Panel* (see page 134) and the *Manage Triggers* application (see page 105).

It is critical that you review the safety information in the Chapter 1: “Approvals & Safety Summary” before proceeding.

7.10.1 Scanning Techniques

- Hold the scanner at an angle. Do not hold it perpendicular to the bar code.
- Do not hold the scanner directly over the bar code. In this position, light can reflect back into the scanner’s exit window and prevent a successful decode.
- Scan the entire bar code. If you are using a 1D laser scanner, make certain that the scan beam crosses every bar and space on the bar code, including the margins on either end of the symbol.
- When using imaging scanners, do not move the scanner while decoding the bar code. Movement blurs the image.
- Hold the scanner farther away for larger bar codes.

- Hold the scanner closer for bar codes with bars that are close together.

A bar code icon appears on the screen during a scan. While the scanner beam is active, the onscreen message states: **SCANNING**. If you want to turn off the onscreen message, disable **Scan Indication** in the *Options* tab of the *Scanner Settings* menu in the *Control Panel*.

When the scan is successful, the bar code data is displayed on the screen until the scan button (or pistol trigger) is released, but only if **Scan Result** is turned on in the *Options* tab of the *Scanner Settings* menu in the *Control Panel*.

7.10.2 Troubleshooting

If the scanner is not working, investigate the following:

- Is the unit on?
- Check that the bar code symbology being scanned is enabled for the hand-held you are using. Check any other parameters that affect the scanning procedure or the bar code.
- Check the bar code to make sure it is not damaged. Try scanning a different bar code to verify that the problem is not with the bar code.
- Check that the bar code is within the proper range.
- Does the hand-held display the warning without scanning? This suggests a hardware problem in the hand-held.
- Is the laser beam scanning across the bar code?
- Once the scan beam has stopped, check the scanner window for dirt or fogging.

7.10.3 Operating One Dimensional (1D) Laser Scanners

- Turn the hand-held on. Wait until the unit has booted up completely.



Important: *If an aiming dot is available on the installed scanner, the dot will be enabled for a configurable time period (including off), after which normal scanning begins. Refer to “Dot Time (msec)” on page 137 for details.*

Double-clicking the trigger will override the aiming delay and initiate an immediate scan. Note that the aiming dot is standard on long-range and high visibility internal scanners.

- Aim at the bar code and press the scan key or the trigger. A scan beam and a warning indicator appear until a successful decode is achieved or six seconds have elapsed.

7.11 **Bluetooth Peripherals**

The Warrington is equipped with a *Bluetooth* radio, making it is possible to communicate with a variety of *Bluetooth* peripherals, including GSM/GPRS handsets, scanners, printers, and so on.

The range of the *Bluetooth* radio is limited to approximately 10 meters.

Psion Teklogix provides built-in support for the *Bluetooth* peripherals listed below.

- GSM/GPRS universal handset.
- *Bluetooth* printer.
- *Bluetooth* headset.

Keep in mind that *Bluetooth* and IEEE 802.11b/g radios both operate in the 2.4GHz band. Although the Warrington includes features to minimize interference, performance of the system will not be optimal if you use both radios simultaneously. Typically, when both radios operate in the hand-held at the same time, they cannot transmit simultaneously—this has a negative impact on overall system throughput. To minimize the impact on the backbone 802.11g network, Psion Teklogix recommends using *Bluetooth* peripherals that have low transaction rates (such as printers and scanners).

Refer to “Bluetooth Setup” on page 110 for information about setting up your *Bluetooth* devices for communication. In addition, review the manual shipped with your *Bluetooth* device to determine the method used to pair with the Warrington host.

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Preliminary Draft

8.1 Warrington Hand-Held Specifications



Note: Performance specifications are nominal & subject to change without notice.

8.1.1 Hardware

Connected Warrington Standard Features:

- 2.7 inch colour touchscreen
- CE .Net Pro
- 64/128 MB Memory
- microSD slot
- 3000 mAh Battery
- VoIP (Push-To-Talk)
- WiFi/*Bluetooth* Radio

Additional Options:

- 1D Imager
- 1D Laser Scanner
- Keyboard Variants: 48-Key Alpha-Numeric or 26-Key Numeric

Batch Warrington Standard Features:

- 2.7 inch Colour Touchscreen
- Numeric Keypad
- CE .Net Core
- 64/128 MB Memory
- microSD Slot
- 3000 mAh Battery

Additional Options:

- *Bluetooth* Radio
- *Bluetooth* Radio and 1D Imager
- *Bluetooth* Radio and 1D Laser Scanner

Physical Dimensions

- 168 mm x 64 mm x 34 mm (6.61 in. x 2.52 in. x 1.34 in.)

Weight (with battery pack)

- 270 g (9.52 oz.)

User Interface

Color Touchscreen Display:	6.86 cm (2.7 in.) diagonal 1/4 VGA portrait mode Sunlight readable transmissive with touch screen Colour 240 x 320 graphic TFT Passive stylus or finger operation Multicolour LED for scanning
Keyboard:	48-key Alpha Numeric (available for Connected hand-helds with 802.11 radio installed) 26-key Numeric (available for Connected and Unconnected (no 802.11 radio installed) units)
Indicators & Controls:	tri-coloured LEDs indicates battery charge and application status
Audio:	Built-in microphone and receiver on all Connected hand-helds 85db internal beeper

Internal Expansion Slots

- One microSD memory card slot – user accessible.

External Ports

- RS232 Serial.
- USB host.

Power Management

- Battery Pack: Lithium Ion 3000 mAh capacity with 8-hour life under normal operating conditions.
- 8 hour battery operation.
- Smart battery system level 3 compliant.
- Built in gas gauge & performance monitor.

- System backup (up to 10 minutes) during battery swap.
- 3 Day real time clock backup.
- Adjustable battery allocation between system backup and runtime.

Environmental Specifications

Drop Test:	1.2 m (4 ft.) - 26 drops to polished concrete.
Rain/Dust:	IP54, IEC 529.
Operating Temperature:	-10 °C to +50 °C (14 °F to 122 °F).
Relative Humidity:	5% to 95% RH non-condensing.
Storage Temperature:	-20 °C to +60 °C (13 °F to 140 °F).
Shock and Vibration:	5-400Hz PSD (random) and 30g (3 axis).
ESD:	+/- 15kVdc air discharge, +/- 8kVdc contacts.

8.1.2 Software

Platform

- PXA270 Processor @ 312Mhz
- Memory:
 - On-board RAM: 128 MB SDRAM
 - On-board ROM: 64 MB Flash

Operating System

- Microsoft® Windows® CE 5.0

Programming Environment

- HTML, XML.
- Mobile Devices SDK:
 - CE .NET SDK
 - Java Visual C++
 - Standard protocols APIs – Windows® sockets (WinCE)

Application Software

- Internet Explorer 6.0 incl.with Windows CE 5.0
- WordPad

- ActiveSync
- Open Tekterm
- ANSI
- TESS terminal emulations
- IBM 3270, IBM 5250, HP 2392
- Wavelink[®]
- MCL
- MCC

8.1.3 Wireless Communication

- On-board IEEE 802.11b/g (CCX Certified)
- On-board *Bluetooth* radio (10 meter range)

8.1.4 Bar Code Applications



Note: All are user-upgradeable.

- Optional 1D EV15 imager expansion module.
- Optional 1D SE955 laser scanner expansion module.

8.1.5 Accessories

Power

- AC power supply (Universal) (charge and operate hand-held).
- Automotive power supply (charge and operate hand-held).
- Powered cradle for vehicle-mount applications.
- Non-powered cradle for vehicle-mount applications.

Communications

- Quad Dock (4-site) with 10/100 BaseT Ethernet and charge functions.
- Desktop Docking Station (charges hand-held & spare battery) provides USB1.1 host and device ports and supports optional plug-on expansion modules supporting 10/100 BaseT Ethernet or RS-232 connections.
- USB cable supports Active Sync without requiring a docking station.

Carrying Accessories

- Hand strap, holster, and various protective carrying cases and pouches.

8.1.6 Approvals

Safety:	IEC 60950-1
EMC:	FCC Part 15 Class B
	EN 55022
	EN 55024
	EN 301 489
Laser:	IEC 60825-1, Class 2
	FDA 21 CFR 1040.10
	1040.11 Class II
<i>Bluetooth:</i>	2.0
RF:	<i>Bluetooth</i> and 802.11b/g: EN300 328, Part 15.247

8.2 Warrington Radio Specifications

8.2.1 802.11b/g Radio

Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM)

Form factor	Embedded surface mount module, 8.2 x 8.4 mm
Antenna port	U.FL jack
Transmit Power	802.11b/g: 50 mW typical (+17 dBm)
Frequency Range	2.400 - 2.4835 GHz
Channels	This radio supports 802.11d. The radio will associate with any 802.11d compliant AP, regardless of what channel is in use.
RX Sensitivity	-86 dBm typ @ 11 Mbps -82dBm @ 6 Mbps, -69 dBm @ 54 Mbps
Data Rates	802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

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EVM	802.11b: 1, 2, 5.5, 11 Mbps 802.11b: -28 dB typ (16%) 802.11g: -29 dB typ (13%)
Bluetooth Co-existent	2-line hardware handshake with Bluetooth radio

8.2.2 Bluetooth Radio

Form Factor	Embedded (920 kbps serial interface)
Bluetooth Version	Ver 2 compliant – features Adaptive Frequency Hopping (AFH) for better co-existence with 802.11 radio and Enhanced Data Rate EDR for up to 3 Mbps data rate)
Antenna Type	Ceramic chip PIFA
Antenna Gain	1 dBi peak
Transmit Power	-3 dBm (0.5mW) minimum, +4 dBm (2.5 mW) max
Frequency Range	2.400–2.4835 GHz
RX Sensitivity (BER<0.1%)	-80 dBm max
Data Rate	V1.2 = 732.2 kbps and 57.6 kbps asymmetric, 433.9 kbps symmetric V2.0 = 2 & 3Mbps
802.11 Co-existent	2-line hardware handshake with 802.11 radio

8.3 Scanner/Imager Specifications

8.3.1 SE 955HP Specifications

Scan Angle	47° ± 3° default / 35° ± 3° reduced
Scan Rate	104 (± 12) scans/sec (bi-directional)
Scan Pattern	Linear
Wavelength	650nm
Input Voltage	3.0-5.5 VDC ± 10%

Input Current	65 mA typical
Standby Current	8 μ A max
Operating Temperature	-20° to 60° C -4° to 140°F
Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm
Dimensions	1.21 cm H x 2.16 cm W x 1.55 cm (max) 0.47 in. H x 0.85 in. W x 0.61 in. D (max)
Symbologies	UPC/EAN, Code 128, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI Plessey

8.3.1.1 SE 955HP Decode Zone

Decode Zone Typical	
4 mil	1.0 in. – 5.5 in. / 2.54 cm – 13.97 cm
5 mil	1.25 in. – 8 in. / 3.18 cm – 20.32 cm
7.5 mil	1.5 in. – 13.25 in. / 3.81 cm – 33.66 cm
10 mil	1.5 in. – 17.5 in. / 3.81 cm – 44.45 cm
UPC 100%	1.5 in. – 23.5 in. / 3.81 cm – 59.69 cm
15 mil	1.5 in. – 29.5 in. / 3.81 cm – 74.93 cm
20 mil	1.75 in. – 35.5 in. / 4.45 cm – 90.17 cm
40 mil	* - 40 in. / * - 101.6 cm
55 mil	* - 55 in. / * - 139.7 cm
* dependent on width of bar code	

8.3.2 EV15 Imager Specifications

Parameter	Specification
Light Source	617nm Highly Visible LED
Scan Angle	40°
Minimum Print Contrast	Minimum 25%
Min x. Dimension	0.1 mm (4 mils)

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Parameter	Specification
Reading Distance	Up to 90cm (35 in)
Symbologies	UPC (E&A), EAN, RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved, Matrix, Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, PDF417, Micro PDF417
Ambient Light	Works in any lighting conditions, from 0 to 100,000 lux
Shock	2000G, 0.7ms, half sinus, 3 axes
Vibration	50G r.m.s

8.3.2.1 EV15 Imager Decode Zone

0 Lux to 100,000 Lux		
	Minimum Range	Maximum Range
Mil Size	Inches	Inches
5	2.5	7
10	3	14
UPC	2	14.5
20	2.5	22
40	3	35.5
High quality symbols in normal room light.		

APPENDIX A

PORT PINOUTS

A.1 Tether Port Pinout

PIN #	Signal Name
1	Ground
2	USB Data Plus (can be configured as Host or Device)
3	USB Data Minus (can be configured as Host or Device)
4	USB VBUS (can provide 5V, 100mA Max for powering USB Devices)
5	RS-232 Tx data
6	RS-232 Rx Data
7	Tether detect resistor ID. Determines what kind of device is attached to the Tether port
8	DC Power In
9	DC Power In
10	DC Power In
11	RS-232 CTS
12	RS-232 RTS
13	RS-232 DSR
14	RS-232 DTR
15	RS-232 DCD
16	RS-232 RI
17	Ground
18	Ground
19	Ground
20	Ground

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Appendix A: Port Pinouts

Battery 3000 mAh - WA3006: Contact Pinout

A.2 Battery 3000 mAh - WA3006: Contact Pinout

PIN #	Signal Name	DESCRIPTION
1	POS	Positive lead of battery
-		Plastic Rip
2	POS	Positive lead of battery
3	CLK	SMBus data clock
4	TEMP	Thermister 10K NTC
5	DATA	SMBus bi-directional data line
6	NEG	Negative lead of battery
7	NEG	Negative lead of battery

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